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**SCS ENGINEERS**

## **Results of Additional Subsurface Investigation**

**John Riddell  
4660 Hessel Road  
Sebastopol, California  
(Assessor's Parcel No. 062-112-005)**

**File Number 01203317.00**

**Prepared by:**

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**To:**

**Ms. Beth Lamb  
North Coast Regional Water Quality Control Board  
5550 Skylane Boulevard, Suite A  
Santa Rosa, California 95403**

**May 13, 2005**

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*Ms. Beth Lamb*

*May 13, 2005*

*Page ii*

## **LIMITATIONS/DISCLAIMER**

This report has been prepared for Mr. John Riddell with specific application to additional subsurface exploration for the property located at 4660 Hessel Road, Sebastopol, California. This report has been prepared in accordance with the care and skill generally exercised by reputable professionals, under similar circumstances, in this or similar localities. The conclusions contained herein are based on analytical data, and points of exploration. The nature and extent of subsurface conditions may and likely do vary between borings and/or points of exploration. No other warranty, either expressed or implied, is made as to the professional conclusions presented herein.

Access to the property and the surrounding area was limited by buildings, roadways, underground and above-ground utilities and other miscellaneous site and site vicinity features. Therefore, the field exploration and points of subsurface observation were somewhat restricted.

Changes in site use and conditions may occur due to man-made changes or variations in rainfall, temperature, water usage, or other factors. Additional information which was not available to the consultant at the time of this assessment or changes which may occur on the site or in the surrounding area may result in modification to the site and the vicinity that would impact the summary presented herein. This report is not a legal opinion.

We trust this report provides the information you require at this time and we appreciate the opportunity to work with you on this project. If you require any additional information, or have any questions, please do not hesitate to contact SCS at (707) 546-9461.

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CA registration fees paid through 06/30/05

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Date



*18 May, 2005*

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Date

## **Introduction**

SCS Engineers (SCS) is pleased to present the results of additional subsurface investigation performed for 4660 Hessel Road, Sebastopol, California. The work was performed in accordance with SCS' Work Plans (SCS, 2004b, 2004c, 2004e) which were approved by the North Coast Regional Water Quality Control Board (NCRWQCB, 2004). The site is located as shown on the Site Location Map, Figure 1 (Assessor's Parcel No. 062-112-005). General site features are as shown on the Site Plan, Figure 2.

## **Background**

The 4660 Hessel Road site, located on the northwest corner of the intersection of Hessel Road and Turner Road, is currently occupied by a residence as shown on Figure 2. From the 1930s until the mid-1970s, the site was operated as a general store and gasoline fueling station with underground storage tanks (USTs) and dispensers (GeoPacific, 1996). An environmental investigation was initiated in 1991 after hydrocarbon impacted soil was discovered by Pacific Gas and Electric Company (PG&E) during an excavation along Hessel Road for the installation of natural gas pipeline hookups (GeoPacific, 1996).

A ground penetrating radar survey (GPR) was conducted at the site in November 1994 in an effort to locate potential sources of the soil impact identified by PG&E in June 1991 (GEOPACIFIC, 1996). The GPR survey identified two known USTs near the porch of the residence at 4660 Hessel Road located as shown on Figure 2. The UST identified as UST-A was discovered west of the porch and was estimated to be approximately 290 gallons in capacity; UST-B was discovered near the eastern portion of the porch and was estimated to be approximately 575-gallons in capacity. Based on product samples collected from the USTs, GEOPACIFIC indicated that the USTs most likely held leaded gasoline. A third UST, believed to be under the porch of the residence, could not be located. The two accessible USTs were removed from the site in January 1995 (GeoPacific, 1996).

Twenty five soil borings (B-1 through B-25) were drilled and sampled at the approximate locations shown on Figure 2 in 1996 (GeoPacific, 1996). The borings were drilled to depths ranging from 4.5 to 6.5 feet below existing ground surface (bgs). Total petroleum hydrocarbons (TPH) as gasoline (g) were detected at concentrations up to 7,300 milligrams per kilogram (mg/kg) in soil samples collected near the former USTs. Benzene, toluene, ethylbenzene and xylenes (BTEX) were detected at concentrations up to 25 mg/kg benzene, 22 mg/kg toluene, 86 mg/kg ethylbenzene, and 430 mg/kg xylenes near the former USTs (GeoPacific, 1996). Soil and groundwater analytical results are presented in Tables 1 and 2.

Nine additional soil borings (B-101 through B-109) were drilled and sampled at the approximate locations shown on Figure 2 in February 1997 (PNEG<sup>1</sup>, 1997). The borings were generally located between the former UST locations and a domestic well (DW-4) which had previously indicated a groundwater impact, and were drilled to depths ranging from 21 to 35 feet bgs. TPH-

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<sup>1</sup> Pacific Northwest EnviroNet Group, Inc, (PNEG) became a part of SCS in July 2003.

g was detected at concentrations ranging from 74 mg/kg (B-103-13') to 920 mg/kg (B-103-9'); BTEX constituents were detected at concentrations ranging from below the laboratory reporting limit to 250 mg/kg xylenes (B-101-9.5'). The soil samples collected from B-104 through B-109 were ND for all target analytes. Soil analytical results are presented in Table 3.

Fourteen pot holes were hand dug down to the gas pipeline in the trench which passed through the zone of shallow soil impact in November 1998 (PNEG, 1999a). The shallow soil sampling locations are as shown on Figure 3. The pipeline, located along Hessel Road, was believed to be possibly providing a preferential pathway for contaminant migration. The results of the investigation indicated that the trench around the gas pipeline did not provide a lateral preferential pathway for contaminant migration (PNEG, 1999a; Tables 4A and 4B).

Six groundwater monitoring wells (MW-1 through MW-6) were drilled, sampled, and installed, and five additional borings (B-110 through B-114) were drilled and sampled at the approximate locations shown on Figures 4 and 7, respectively, in June and July 1999 (PNEG, 1999b). The monitoring wells were drilled in pairs, with a shallow and a deep well comprising each pair. The three deep wells were MW-1, MW-3, and MW-5, and the three shallow wells were MW-2, MW-4, and MW-6. The shallow wells were installed and screened from 4 to 14 feet bgs, while the three deeper wells were installed and screened to intersect water beneath a shallow clay layer, which is present between 12 and 17 feet bgs on the eastern side of the study area. The shallow clay layer was not found at the MW-1 location so the well was subsequently screened at the same approximate depth as MW-3 and MW-5. TPH-g was not detected in any of the soil samples collected from the monitoring well borings. TPH-d was detected at a concentration of 2.1 mg/kg in MW-3-10' and was ND in all other samples collected during this investigation. TPH-mo was detected at a concentration of 5.0 mg/kg in MW-5-15' and was ND in all other samples. All soil samples collected for analysis were ND for MTBE (Table 5).

TPH-g was detected in the soil samples collected from the borings at concentrations ranging from 3.0 mg/kg in B-114-15' to 1,700 mg/kg in B-114-10' and B-114-13'. TPH-d was detected at concentrations ranging from 1.2 mg/kg in B-114-15' to 2,200 mg/kg in B-114-5' and B-114-13'. TPH-mo was detected in only one of the samples (B-114-13') at a concentration of 100 mg/kg. BTEX constituents were detected at concentrations ranging from 0.0082 mg/kg in B-110-10' to 87 mg/kg xylenes in B-114-10'. Soil analytical results are summarized in Table 6.

Ten additional monitoring wells (MW-7 through MW-16), consisting of five pairs of shallow-screened and deep-screened wells, were installed in October and November 2000 at the approximate locations shown on Figure 7 (PNEG, 2000e). TPH-g was detected in the soil samples collected from MW-16 at depths of 10 and 15.5 feet at concentrations of 3.5 mg/kg and 5.2 mg/kg, respectively. TPH-d was detected at concentrations of 3.7 mg/kg, and 2.7 mg/kg in MW-10-14', and MW-16-15.5', respectively. All soil samples were ND for MTBE (Table 5).

An indoor air quality survey was conducted by BioMax in the Giuliani residence on the adjacent property to the north of the subject site, located at 4620 Hessel Road. The results of the indoor air survey indicated that there was no threat to the Giuliani residents at 4620 Hessel Road from petroleum hydrocarbons in the vapor phase (PNEG, 2001c).

**Ms. Beth Lamb**

**May 13, 2005**

**Page 3**

Twenty six additional borings (B-201 through B-226) were drilled and sampled at the approximate locations shown on Figure 5 in August 2001 (PNEG, 2002b). TPH-g was detected at concentrations ranging from 1.1 mg/kg (B-204-4' and B-216-6') to 1,300 mg/kg (B-221-9'); TPH-d at concentrations ranging from 27 mg/kg (B-211-8') to 1,400 mg/kg (B-216-11.5'); and BTEX constituents at concentrations ranging from 0.011 mg/kg benzene in B-210-8' to 140 mg/kg xylenes in B-210-4' and B-217-6'. All samples were ND for MTBE (Table 7).

In October 2001, approximately 1,800 cubic yards of soil was excavated from the site (PNEG, 2002b). The excavated soil was disposed at Forward Landfill in Manteca, California. Sidewall and bottom soil samples were collected under the direction of Ms. Beth Lamb of the NCRWQCB at the approximate locations shown on Figure 6. Soil beneath the house at 4640 Hessel Road was deemed to have been inaccessible without demolition of the house. The preferential pathway which was identified during the excavation activities is likely the cause of the soil and groundwater impact to the north. Analytical results from the site excavation activities are summarized in Table 8.

Subsequent to the site remediation, four additional monitoring wells were drilled and installed, two of which were shallow (MW-18 and MW-20), and two of which were deep (MW-17D and MW-19D), at the approximate locations shown on Figure 7 in February, 2004 (SCS, 2004b). TPH-g was detected in the samples collected from MW-20 at depths of 5 feet and 10 feet at concentrations of 550 mg/kg and 52 mg/kg, respectively, and was ND in the samples collected from MW-18. BTEX constituents were detected in the samples collected from MW-20 at depths of 5 feet and 10 feet at maximum concentrations of 14.6 mg/kg xylenes and 2.18 mg/kg xylenes, respectively, and xylenes were detected at a concentration of 0.0035 mg/kg in the MW-18-10' sample. The five ether-based oxygenates were ND in all samples collected for analysis from MW-18 and MW-20. The additional VOCs were ND in the MW-18 samples, and were detected at concentrations ranging from 0.14 mg/kg n-butylbenzene in the MW-20-10' sample to 9.5 mg/kg 1,2,4-trimethylbenzene in the MW-20-10' sample. Soil analytical results are summarized in Table 9.

A shallow stand pipe was installed on the east bank of the creek at the site in order to evaluate the surface water-groundwater interaction in the site vicinity (SCS, 2004b).

Domestic wells DW-1, DW-3, DW-4, DW-HD, DW-HD2, and DW-4615 corresponding to the domestic wells located at 4660, 4660B, 4620, and 4615 Hessel Road at the approximate locations shown on Figure 7, have been on semi-annual sampling schedules since February 2001. Sampling of DW-4615 is being performed on a quarterly basis (NCRWQCB, 2002). Each of the subject domestic wells was most recently sampled on January 4 and 5, 2005. Copies of the analytical reports were submitted in a previous report (SCS, 2005). Recent and historical domestic well sample analytical results are summarized in the attached Table 10.

### **Stand Pipe Sampling**

A sample was most recently collected from the stand pipe on January 5, 2005 using a disposable bailer. The sample was below the laboratory report detection limit (RDL) for all target analytes.

### **Stream Sampling**

Two water samples were most recently collected from the stream which flows northeasterly along the western side of the investigation area during a previous sampling event at the site in June 2004 (SCS, 2004d). The samples collected from the stream in June 2004 were below the laboratory RDL for all target analytes. SCS requests further clarification from the NCRWQCB prior to the next quarterly sampling event with regard to the stream sampling locations and frequency. Based on two consecutive occurrences of stream sampling (March and June 2004) for which the samples were below the laboratory RDL for all target analytes, SCS recommends that stream sampling occur on an annual basis during periods of highest groundwater as the stream appears to be a gaining stream but as of yet, does not appear to have been impacted by the groundwater impact beneath the site and vicinity. As indicated on Figures 8 and 9, the groundwater impact at the site appears to be at a lower elevation than the stream and is being retarded from entering the stream water.

### **Deep Borings – 2005**

Eight deep borings (B-115 through B-122) were drilled and sampled at the approximate locations shown on Figure 7 between the dates of January 24 and February 9, 2005. The soil from the borings was subjectively screened with a PID and by visual appearance and odor. Soil samples were collected and examined for lithology from each boring at depths ranging from approximately 10.5 feet bgs to 35.5 feet bgs. The ends of the sample tubes selected for analysis were covered with Teflon® Tape and sealed with plastic caps. Soil samples were not collected from borings B-117 and B-118 based on a lack of subjective evidence of impact and with the assistance of the PID. Groundwater samples were collected from each of the borings at depths ranging from 4 feet bgs to 40 feet bgs. The groundwater samples were collected using a Hydropunch® at distinct changes in lithology and at separate identifiable water-bearing zones. Soil and groundwater samples were labeled, stored under refrigerated conditions, and transported under Chain-of-Custody documentation to Analytical Sciences (AS) of Petaluma, California for analysis. AS is a California Department of Health Services certified laboratory for the analysis requested. Copies of AS' current certifications have been reviewed and are on file. Upon completion of sampling activities, the borings were backfilled and sealed with an impermeable material as designed by the C-57 licensed driller to prevent the vertical migration of petroleum hydrocarbons in the borehole.

The augers were pressure washed between borings, and the small sampling equipment was washed in a detergent solution and rinsed to prevent cross contamination between borings. The drill cuttings were placed on and covered with plastic sheeting, pending disposal. The water generated by decontamination and sampling activities is stored at the site in steel 55-gallon

UN/DOT-approved drums, pending disposal. Options for the disposal of the soil and groundwater are being evaluated.

### **Laboratory Analysis**

Soil and groundwater samples collected from the borings were analyzed for TPH-g using EPA Method 8015M, and for volatile organic compounds (VOCs) by EPA Method 8260B full scan. Additionally, the grab groundwater sample collected from B-122-W@10.0' was analyzed for TPH-d and TPH-mo by EPA Method 3510/8015M.

### **Soil Analytical Results from Deep Borings – 2005**

TPH-g was detected in the B-119@20.5', B-120@16.0', and B-122@10.5' samples at concentrations of 1.0 mg/kg, 12 mg/kg, and 1,700 mg/kg, respectively. BTEX constituents were detected at concentrations ranging from 0.0018 mg/kg ethylbenzene in B-122@31.0' to 109 mg/kg xylenes in B-122@10.5'. The lead scavenger, ethylenedichloride (EDC) was detected at concentrations of 0.003 mg/kg, 0.0096 mg/kg, 0.002 mg/kg, and 0.0052 mg/kg in the B-115@13.0', B-116@25.5', B-119@20.5', and B-122@16.0' samples, respectively. Additional gasoline-related VOCs were detected at concentrations ranging from 0.0073 mg/kg n-butylbenzene in B-122@16.0' to 62 mg/kg 1,2,4-trimethylbenzene in B-122@10.5'. The five ether-based oxygenates (MTBE, DIPE, ETBE, TAME, and TBA) were not detected above the laboratory RDL in any of the samples. Soil analytical results are presented in Table 11.

### **Groundwater Analytical Results from Deep Borings – 2005**

TPH-g was detected in at least one groundwater sample collected from each of the borings at concentrations ranging from 100 micrograms per liter ( $\mu\text{g/L}$ ) in B-120-W@5.0' to 58,000  $\mu\text{g/L}$  in B-122-W@10.0'. BTEX constituents were detected in at least one groundwater sample collected from each of the borings at concentrations ranging from 1.2  $\mu\text{g/L}$  toluene B-119-W@3.0' to 20,000  $\mu\text{g/L}$  toluene in B-122-W@10.0'. EDC was detected in at least one groundwater sample collected from each of the borings at concentrations ranging from 2.4  $\mu\text{g/L}$  in B-121-W@15.0' to 63  $\mu\text{g/L}$  in B-115-W@21.5'. The additional gasoline-related VOCs were detected at concentrations ranging from 1.0  $\mu\text{g/L}$  naphthalene in B-120-W@5.0' to 3,000  $\mu\text{g/L}$  1,2,4-trimethylbenzene in B-122-W@10.0'. Groundwater analytical results are presented in Table 12.

### **Site Conceptual Model Site Geology and Hydrology**

The lithology in the vicinity of the site consists of a layer of silty sand to poorly graded sand with interlayered sandy silt zones from the surface to depths varying between approximately 15 feet bgs in the southern areas of the site to approximately 25 feet bgs in the northern areas of the site

(Figures 8 and 9). Gravelly layers have also been identified in this zone, primarily to the east along the creek. Below the silty sand and sand layer is a lower permeable clay/silt layer which is present in the area of the former UST at a depth of approximately 15 feet bgs and thickness of only several feet and extends to the northern area of the site to maximum depth of 21 feet bgs and thickens to 10 to 15 feet. At locations in the northern area of the site this layer is identified as a highly organic silt/clay layer which is somewhat peat-like in nature. Below this lower permeable clay/silt layer are discontinuous layers of poorly graded sand, silty sand, sandy clay, clayey gravel, and silt to the maximum depth explored of 40 feet bgs.

The borings drilled in June and July of 1999 indicated a clay layer present in the eastern portion of the study area from approximately 12 to 17 feet bgs. This clay layer was detected in MW-3, MW-4, MW-5, and MW-6. The clay layer was not encountered in MW-1 or MW-2 in the western portion of the study area. Recently drilled wells and deep borings continue to indicate a surficial alluvial to fluvial environment in the site vicinity. The lithology consists of recently deposited sands, silts, and gravels to varying depths beneath the site. A lower permeable clay/silt layer has been identified which appears to gently slope downward towards the north (Figures 8 and 9). This lower permeable clay/silt layer and associated subsurface material throughout the area is part of the Wilson Grove Formation, which was deposited in an inland sea several million years ago. It is possible that this site was in a near shore environment and that terrace deposits are present, thus explaining the distinct changes in lithology over very short distances. It is also evident that, regardless of the mechanism of deposition, the more permeable zones are generally connected and appear to slope gently towards the stream channel along the top of an aquitard (Figures 8 and 9).

Based on analytical results, the bulk of the identified groundwater impact occurs in the shallow groundwater present in the high permeability, predominantly sand layer which is present in all holes drilled to date from the surface to a minimum depth of 20 to 25 feet bgs. The groundwater impact detected in deep borings B-117 and B-120 during the most recent drilling program at depths of 40 feet and 39 feet bgs, respectively, is most likely the result of trickle down affects caused by retracting the Hydropunch® tool in an attempt to obtain water samples from the boreholes. Water samples from both these holes were slow yielding and the sampler had to be pulled back to the maximum extent before a water sample could be collected, therefore, the samples may not represent an actual impact to the deeper water-bearing zone. A deeper impact indicated by the presence of petroleum related hydrocarbons in some of the domestic well to the north and east of the site may be the result of the northerly plunging lower permeable clay/silt and the thicker sand and gravel layers associated with the alluvial or fluvial deposits.

As indicated on Figure 8, MW-17D and MW-19D appear to have been installed in the second, deeper water-bearing zone at the site and are generally up-gradient from the plume. As illustrated on Figure 8, the groundwater impact appears to be migrating along a preferential pathway which is generally sloping downwards towards the stream channel along the top of an aquitard. The relatively high concentrations of contaminants in MW-15D appear to be the result of excess surface water infiltrating the subsurface in the vicinity of the septic leach field and forcing the contaminants down until they reach the aquitard which slopes towards the stream channel. This appears to be the most likely cause of the elevated impact which has been detected in MW-15D when compared to MW-16. Additionally, MW-3 appears to have been, at least

partially, installed in the lower water-bearing zone which explains why MW-3 has been generally ND in comparison to MW-15D. As indicated on Figure 9, another preferential pathway appears to be present along the western side of the site and along the back side of the Giuliani residence (adjacent property to the north) which is most likely the cause of the impact detected in the deep boring B-122 and is likely contributing to the impact detected in MW-15D.

### **Discussion and Recommendations**

Based on the results of the most recent drilling program conducted at the site, source areas of soil impact appear to be continuing to impact the groundwater beneath the site and vicinity. The groundwater impact appears to be migrating along preferential pathways in a north/northwesterly direction from the former USTs, primarily within a gravel channel in the area of boring B-122 (Figure 8) and to the north of the site in the area of monitoring well MW-15 (Figures 8 and 9). Sufficient information has been generated to date which indicates that the lateral and vertical extent of the groundwater impact at the site has been generally assessed to the extent feasible without access to the neighboring property north of 4620 Hessel Road. Possible deeper exploration may be warranted to the north of B-115; however, this may not provide usable information because of the lack of access to the property north of 4620 Hessel Road and it would be highly unlikely that further soil or groundwater remediation could occur along Hessel Road.

Due to the presence of the Giuliani residence north of the site at 4620 Hessel Road, additional soil removal activities at the site may be feasible but would require the installation of shoring to prevent any damage to the residence, and care would have to be taken to ensure that excessive sediments do not enter the stream. SCS recommends that a Feasibility Study/Corrective Action Plan (FS/CAP) be prepared for the site to evaluate soil and groundwater remediation options. Any further remedial option would however require the concurrence of the NCRWQCB and the State UST Cleanup Fund and the cooperation of the effected parties north of the site.

**Attachments**  
**File 01203317.00**

**Figures**

- Figure 1: Site Location Map
- Figure 2: Site Plan – Borings – 1994, 1995, 1997
- Figure 3: Site Plan – Trench Sample Locations – 1998
- Figure 4: Site Plan – Borings – 1999
- Figure 5: Site Plan – Excavation Limit Borings – 2001
- Figure 6: Site Plan – Excavation Sample Locations – 2001
- Figure 7: Site Plan with Monitoring Well and Boring Locations
- Figure 8: Geologic Section A-A'
- Figure 9: Geologic Section B-B'
- Figure 10A: Groundwater Flow Direction and Gradient - Shallow Wells for 01/04/05
- Figure 10B: Groundwater Flow Direction and Gradient - Deep Wells for 01/04/05
- Figure 11A: Isoconcentration Map - TPH-g in Shallow Wells – January 2005
- Figure 11B: Isoconcentration Map - TPH-g in Deep Wells – January 2005
- Figure 12A: Isoconcentration Map - ΣBTEX in Shallow Wells – January 2005
- Figure 12B: Isoconcentration Map - ΣBTEX in Deep Wells – January 2005
- Figure 13A: Isoconcentration Map - EDC in Shallow Wells – January 2005
- Figure 13B: Isoconcentration Map - EDC in Deep Wells – January 2005

**Diagrams and Tables**

Key to Diagrams and Tables

- Diagram A: TPH-g & Groundwater Elevation vs Time - Shallow Wells
- Diagram B: TPH-g & Groundwater Elevation vs Time - Deep Wells
- Diagram C: ΣBTEX & Groundwater Elevation vs Time - Shallow Wells
- Diagram D: ΣBTEX & Groundwater Elevation vs Time - Deep Wells
- Diagram E: EDC & Groundwater Elevation vs Time - Shallow Wells
- Diagram F: EDC & Groundwater Elevation vs Time - Deep Wells
- Table 1: Partial Analytical Results from Shallow Sampling Activities – Soil
- Table 2: Partial Analytical Results from Shallow Sampling Activities – Water
- Table 3: Soil Sample Analytical Results from Deep Drilling Program – 1997
- Table 4A: Analytical Results from Gas Pipeline Trench Sampling – Gas/BTEX/MTBE
- Table 4B: Analytical Results from Gas Pipeline Trench Sampling – Diesel/Motor Oil
- Table 5: Soil Sample Analytical Results from Monitoring Wells
- Table 6: Soil Sample Analytical Results from 1999 Borings
- Table 7: Soil Analytical Results from 2001 Borings
- Table 8: Soil Analytical Results from 2001 Excavation
- Table 9: Soil Boring Analytical Results – Monitoring Wells – 2004
- Table 10: Domestic Well Analytical Results
- Table 11: Soil Boring Analytical Results - 2005
- Table 12: Groundwater Boring Analytical Results – 2005
- Table 13: Groundwater Flow Direction and Gradient for Shallow Wells
- Table 14: Groundwater Flow Direction and Gradient for Deep Wells
- Table 15: Monitoring Well Analytical Results

**Appendices**

**Appendix A**

Unified Soil Classification System Chart and Boring Log Legend  
Boring Logs for B-115 through B-122

**Appendix B**

Analytical Sciences Report #5012501, dated February 7, 2005  
Analytical Sciences Report #5012603, dated February 14, 2005  
Analytical Sciences Report #5012702, dated February 10, 2005  
Analytical Sciences Report #5020903, dated February 23, 2005  
Analytical Sciences Report #5021003, dated February 23, 2005  
Analytical Sciences Report #5020802, dated February 28, 2005

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**File No. 01203317.00**

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- PNEG, 2000c. Results of the 2<sup>nd</sup> Quarter 2000 Monitoring Event and Domestic Well Sampling at 4660 Hessel Road, Sebastopol, California, July 11.
- PNEG, 2000d. Results of the 3<sup>rd</sup> Quarter 2000 Monitoring Event and Domestic Well Sampling at 4660 Hessel Road, Sebastopol, California, September 5.
- PNEG, 2000e. Report of Investigation, 4<sup>th</sup> Quarter 2000 Monitoring Event with Domestic Well Sampling, and Interim Remediation Plan at 4660 Hessel Road, Sebastopol, California, December 29.
- PNEG, 2001a. Results of the 1<sup>st</sup> Quarter 2001 Monitoring Event and Domestic Well Sampling Event at 4660 Hessel Road, Sebastopol, California, April 3.
- PNEG, 2001b. Work Plan for 4660 Hessel Road, Sebastopol, California, July 13.

- PNEG, 2001c. Results of the 2<sup>nd</sup> Quarter 2001 Monitoring Event and Domestic Well Sampling Event at 4660 Hessel Road, Sebastopol, California, July 30.
- PNEG, 2001d. Results of the 3<sup>rd</sup> Quarter 2001 Groundwater Monitoring and Domestic Well Sampling Event at 4660 Hessel Road, Sebastopol, California, October 17.
- PNEG, 2002a. Results of the 4<sup>th</sup> Quarter 2001 Groundwater Monitoring and Sampling Event at 4660 Hessel Road, Sebastopol, California, January 14.
- PNEG, 2002b. Report on Excavation at 4660 Hessel Road, Sebastopol, California, February 27.
- PNEG, 2002c. Results of the 1<sup>st</sup> Quarter 2002 Groundwater Monitoring and Sampling Event at 4660 Hessel Road, Sebastopol, California, May 15.
- PNEG, 2002d. Results of the 2<sup>nd</sup> Quarter 2002 Groundwater Monitoring and Sampling Event at 4660 Hessel Road, Sebastopol, California, July 18.
- PNEG, 2002e. Results of the 3<sup>rd</sup> Quarter 2002 Groundwater Monitoring and Sampling Event at 4660 Hessel Road, Sebastopol, California, September 24.
- PNEG, 2002f. Work Plan to Study the Surface Water-Groundwater Interaction at 4660 Hessel Road, Sebastopol, California , December 12.
- PNEG, 2003a. Results of the 4<sup>th</sup> Quarter 2002 Groundwater Monitoring and Sampling Event at 4660 Hessel Road, Sebastopol, California, January 21.
- PNEG, 2003b. Work Plan for Additional Investigation at 4660 Hessel Road, Sebastopol, California, February 21.
- PNEG, 2003c. Results of the 1<sup>st</sup> Quarter 2003 Groundwater Monitoring and Sampling Event at 4660 Hessel Road, Sebastopol, California, April 24.
- PNEG, 2003d. Results of the 2<sup>nd</sup> Quarter 2003 Groundwater Monitoring and Sampling Event at 4660 Hessel Road, Sebastopol, California, July 10.
- SCS, 2003a. Results of the 3<sup>rd</sup> Quarter 2003 Groundwater Monitoring and Sampling Event at 4660 Hessel Road, Sebastopol, California, October 8.
- SCS, 2004a. Results of the 4<sup>th</sup> Quarter 2003 Groundwater Monitoring and Sampling Event at 4660 Hessel Road, Sebastopol, California, January 12.
- SCS, 2004b. Results of Additional Subsurface Investigation and Work Plan for Additional Subsurface Investigation at 4660 Hessel Road, Sebastopol, California, April 30.
- SCS, 2004c. Work Plan for Additional Subsurface Investigation at 4660 Hessel Road, Sebastopol, California, July 20.
- SCS, 2004d. Results of the 2<sup>nd</sup> Quarter 2004 Groundwater Monitoring and Sampling Event at 4660 Hessel Road, Sebastopol, California, August 10.
- SCS, 2004e. Work Plan Addendum, September 2.
- SCS, 2004f. Results of the 3<sup>rd</sup> Quarter 2004 Groundwater Monitoring and Sampling Event at 4660 Hessel Road, Sebastopol, California, November 15.
- SCS, 2005. Results of the 4<sup>th</sup> Quarter 2004 Groundwater Monitoring and Sampling Event at 4660 Hessel Road, Sebastopol, California, April 7.

***Ms. Beth Lamb***

***May 13, 2005***

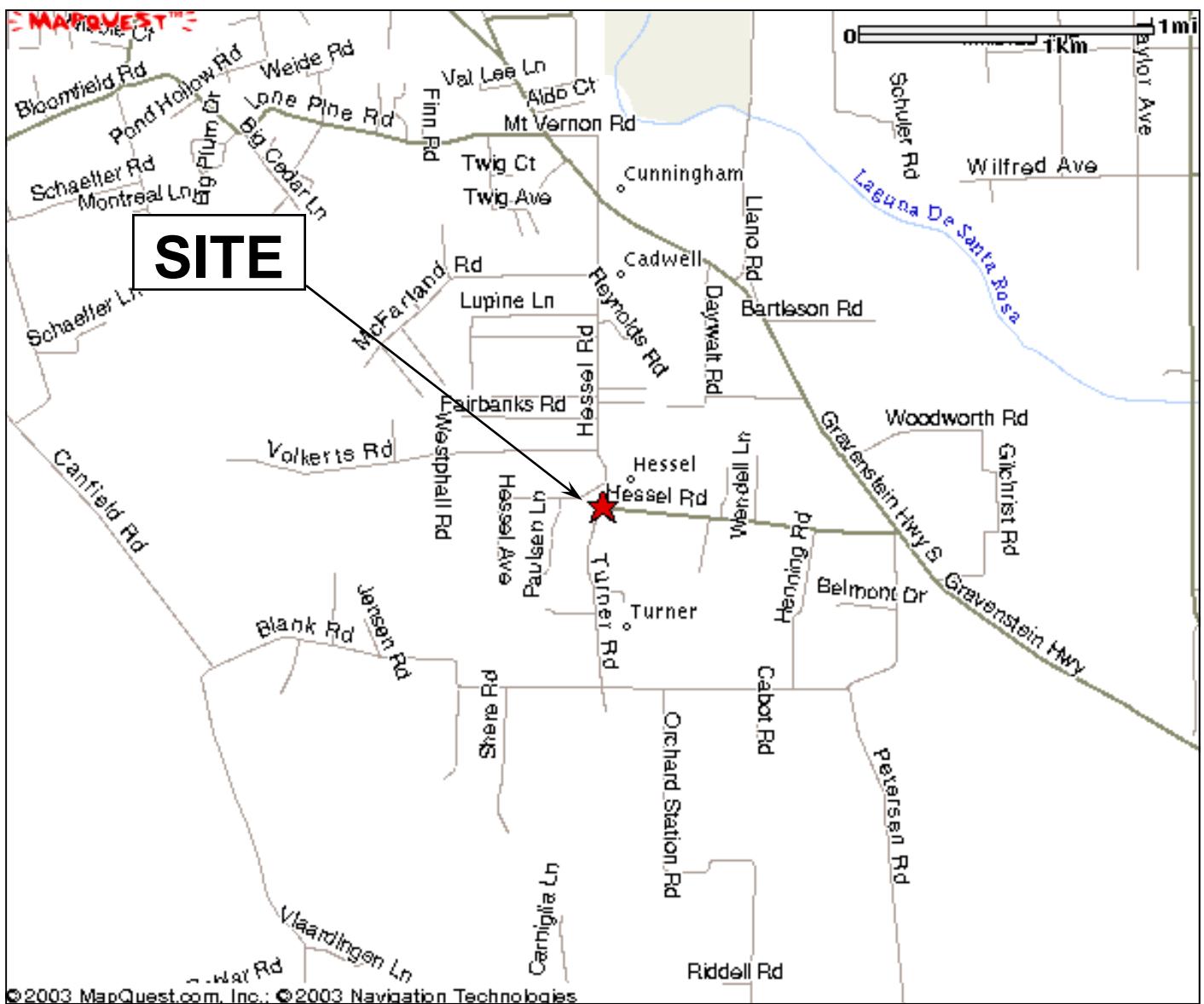
***Page 11***

**Distribution List  
File No. 01203317.00**

Mr. John Riddell  
4660 Hessel Road  
Sebastopol, CA 95472

Mr. & Mrs. Gary and Victoria Giuliani  
4620 Hessel Road  
Sebastopol, CA 95472

Mr. Paul McBride  
4660 Hessel Road, Unit B  
Sebastopol, CA 95472



**SCS ENGINEERS**

3645 WESTWIND BOULEVARD  
SANTA ROSA, CA 95403  
PH. (707) 546-9461 FAX (707) 544-5769

PROJ. NO:	01203317.00	TAKEN BY:	FILE#:
DATE:	10/07/03	CREATED BY:	JJM
		APP. BY:	

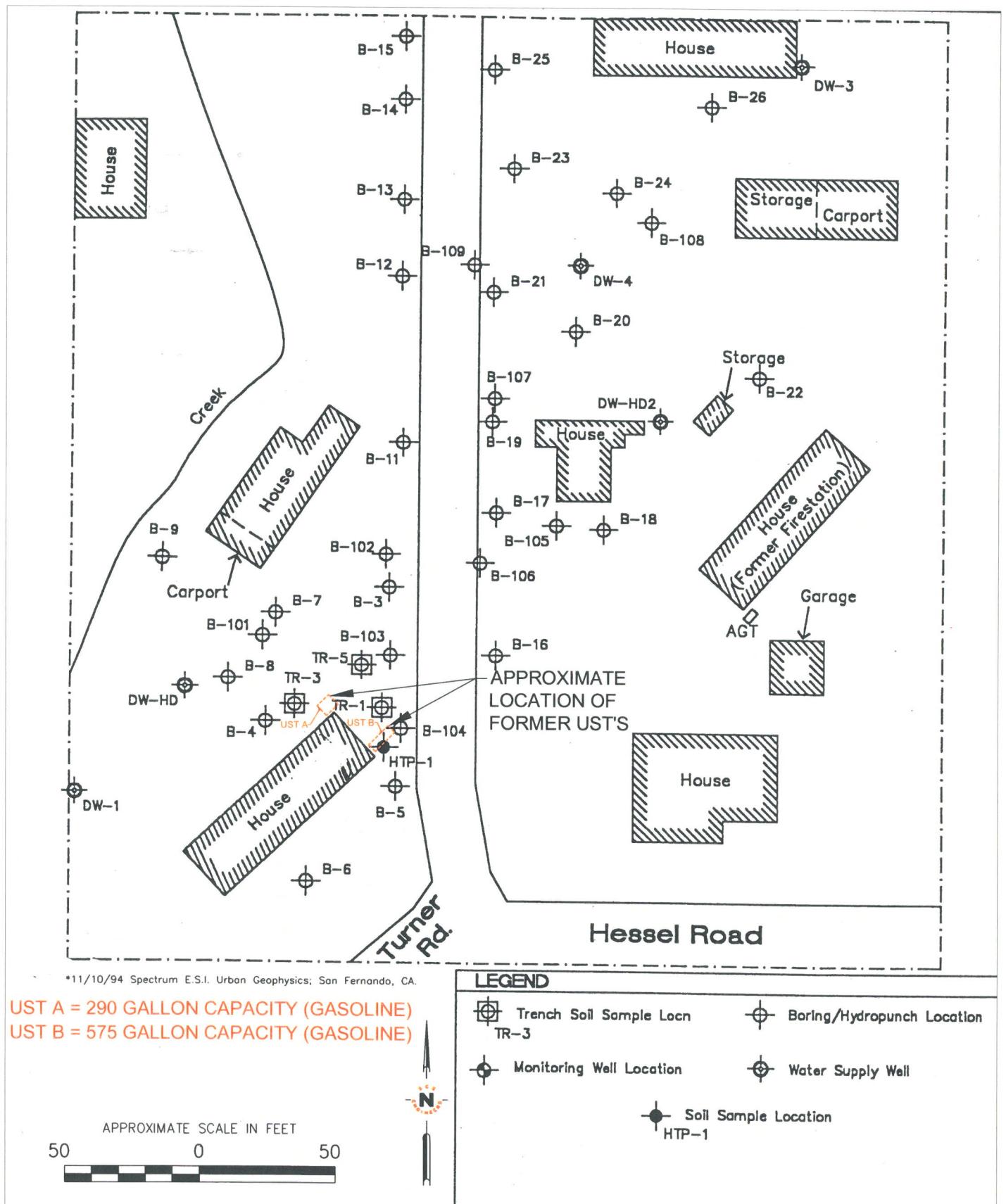
### SITE LOCATION MAP

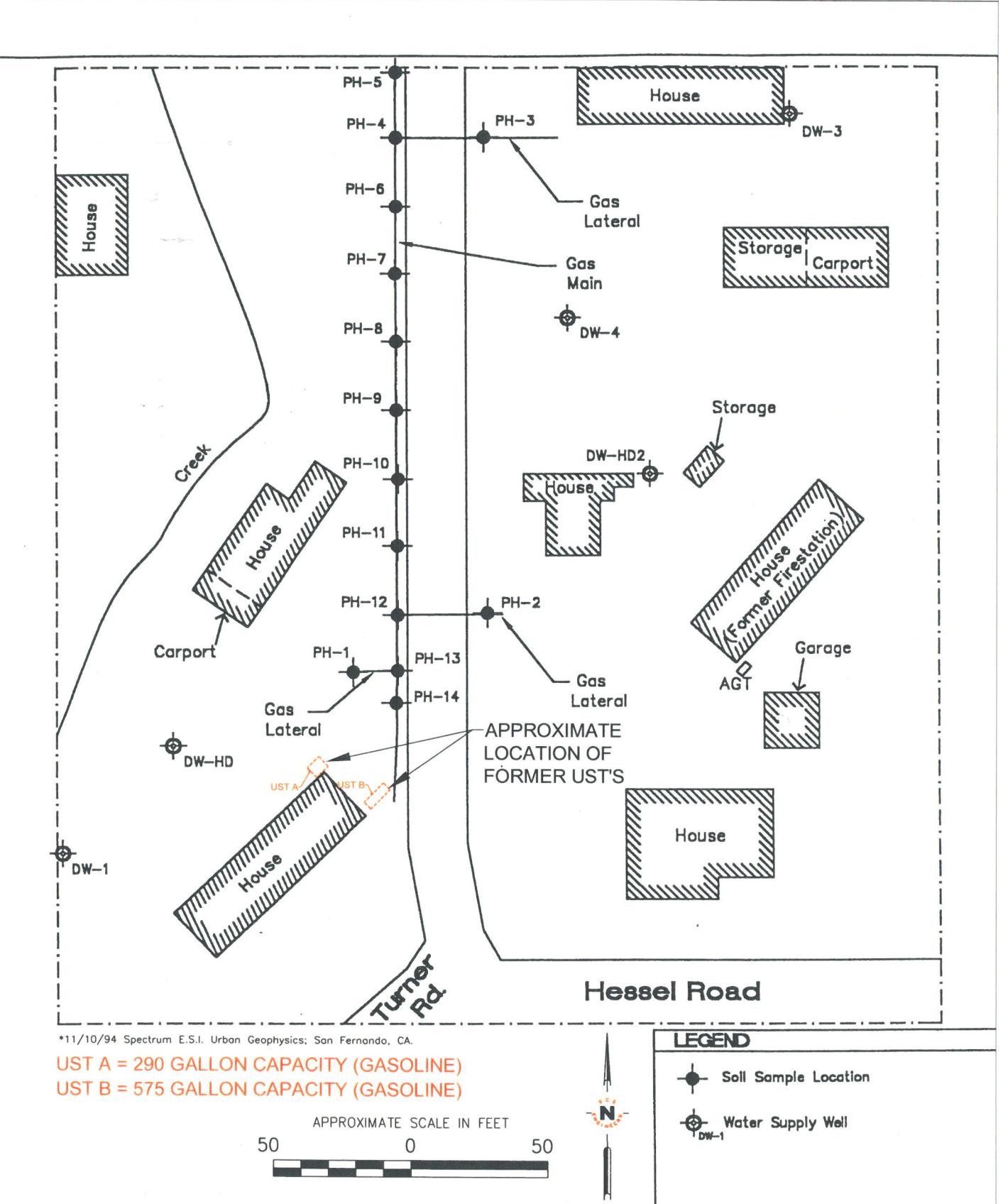
John Riddell  
4660 Hessel Road  
Sebastopol, California

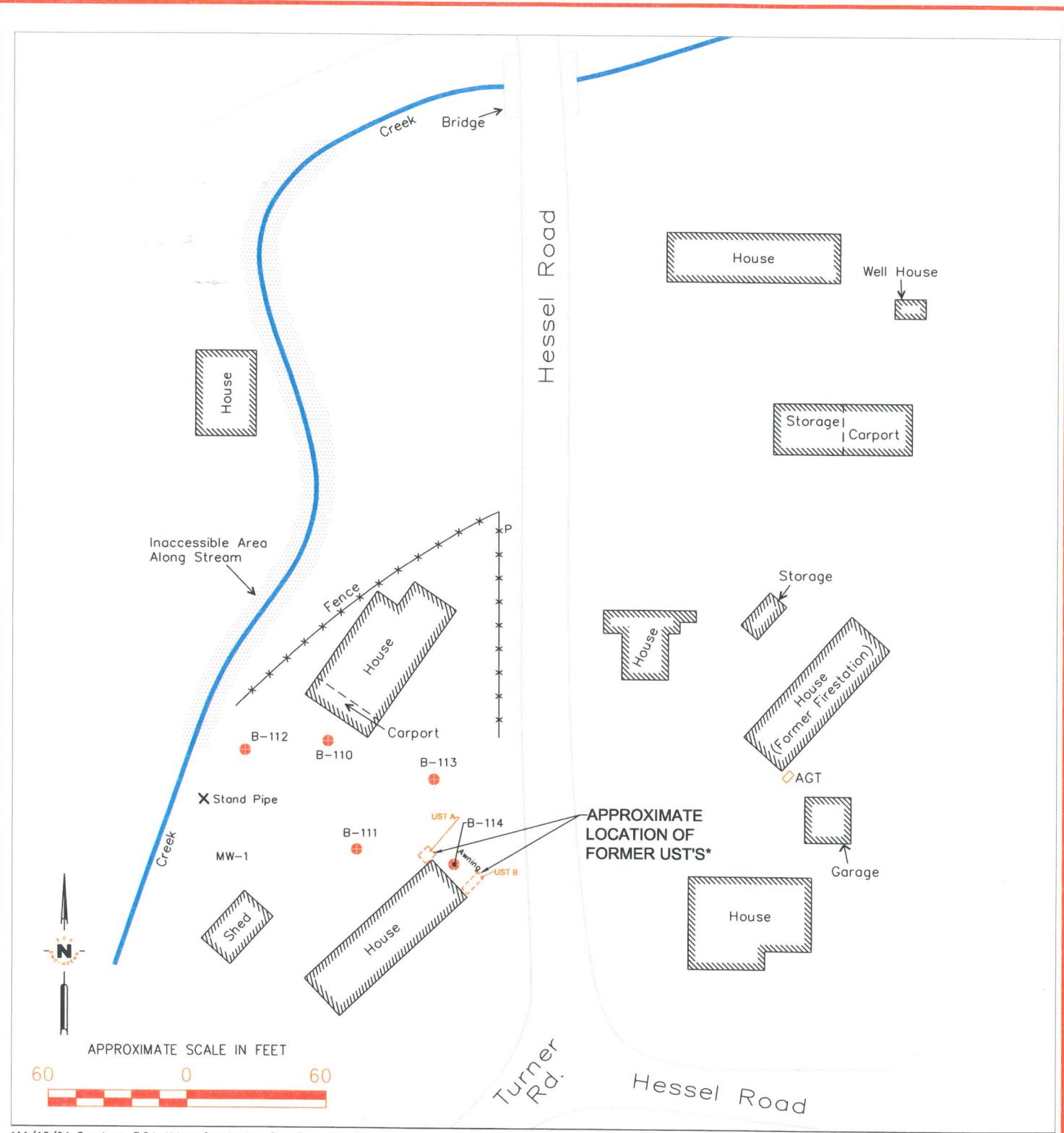
APPROX. SCALE

FIGURE

1

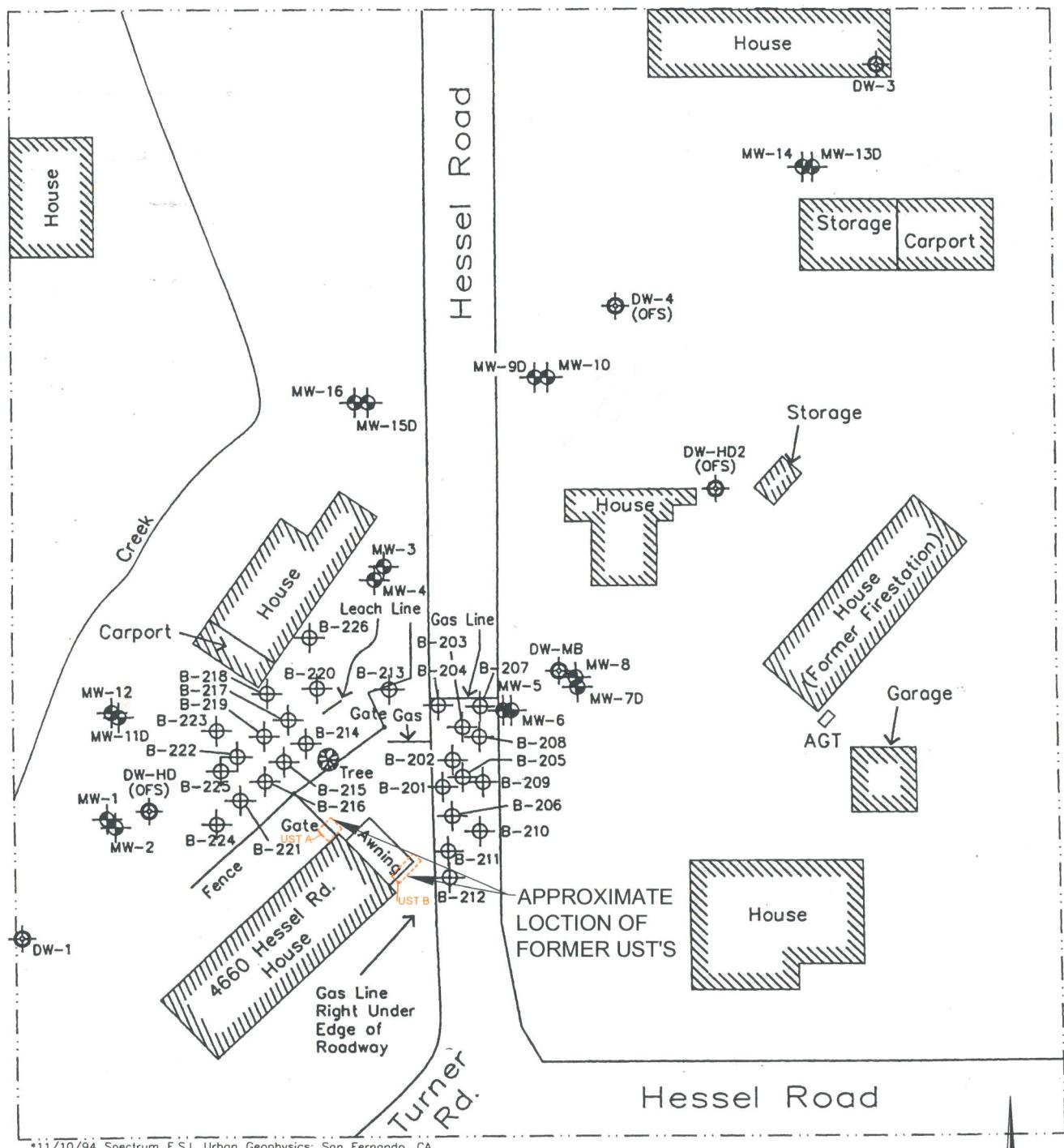






#### LEGEND

- Boring Location – 1999



\*11/10/94 Spectrum E.S.I. Urban Geophysics; San Fernando, CA.

UST A = 290 GALLON CAPACITY (GASOLINE)  
UST B = 575 GALLON CAPACITY (GASOLINE)

APPROXIMATE SCALE IN FEET



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SANTA ROSA, CALIFORNIA 95453  
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PROJ. NO.	OWN. BY:	ACAO FILE:
3317.00	ALP	3317.00-Exclimits_-3-05
DATE	CRR. BY:	APP. BY:
3/24/05	KLC	KLC

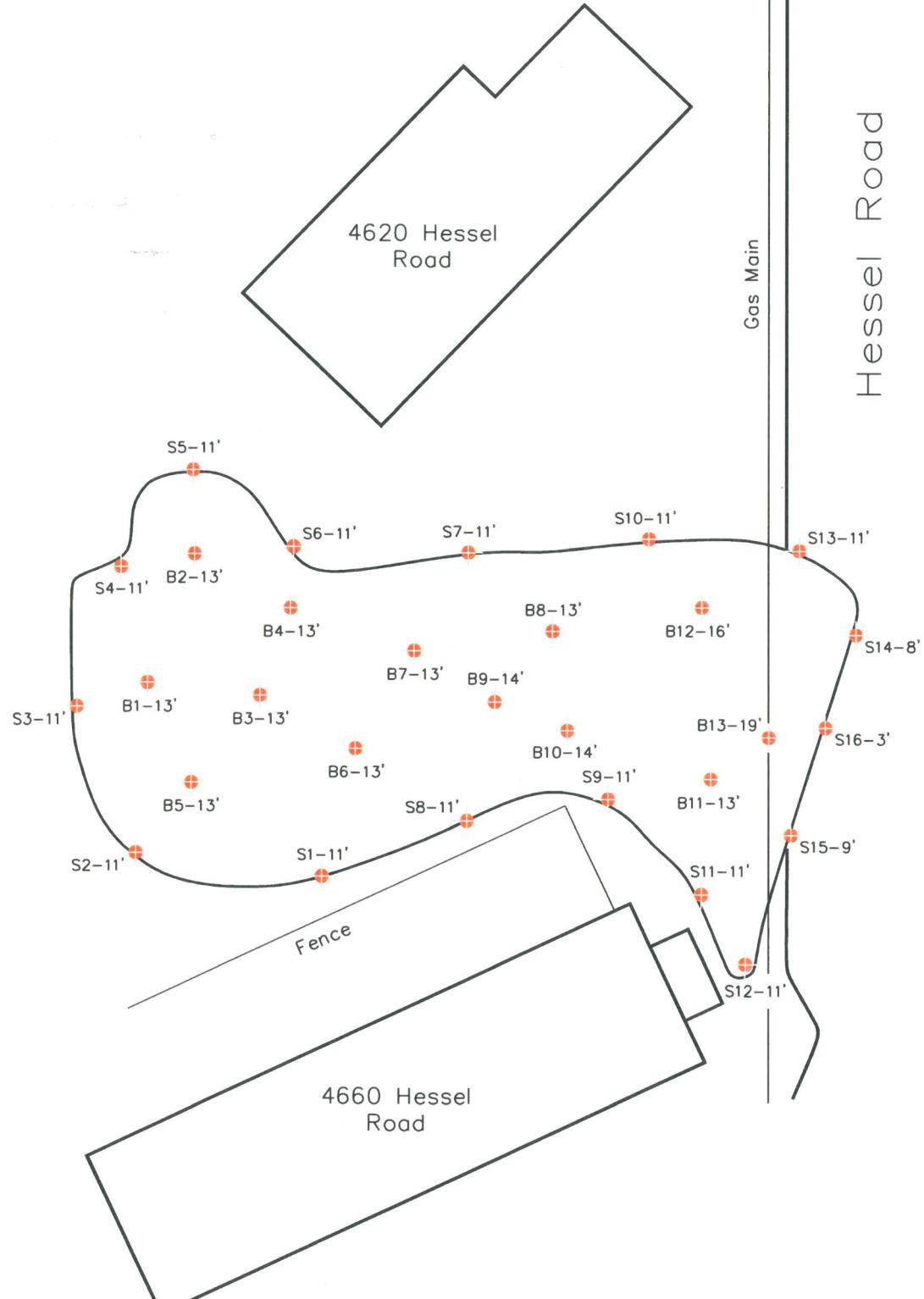
SHEET TITLE: SITE PLAN - EXCAVATION LIMIT BORINGS - 2001

PROJECT TITLE:

JOHN RIDDELL  
4660 HESSEL ROAD  
SEBASTOPOL, CALIFORNIA

SCALE:  
1" = 50'

FIGURE NO.  
5



APPROXIMATE SCALE IN FEET



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3645 WESTWIND BOULEVARD  
SANTA ROSA, CALIFORNIA 95403  
PH. (707) 546-5461 FAX. (707) 544-5769

PROJ. NO.	01203317.00	DRAWN BY:	JJM	ACAD FILE:	3317.00_SitePlan
DATE	4/30/04	CHK. BY:	KLC	APP. BY:	

SHEET TITLE

SITE PLAN - EXCAVATION SAMPLE LOCATIONS - 2001

PROJECT TITLE

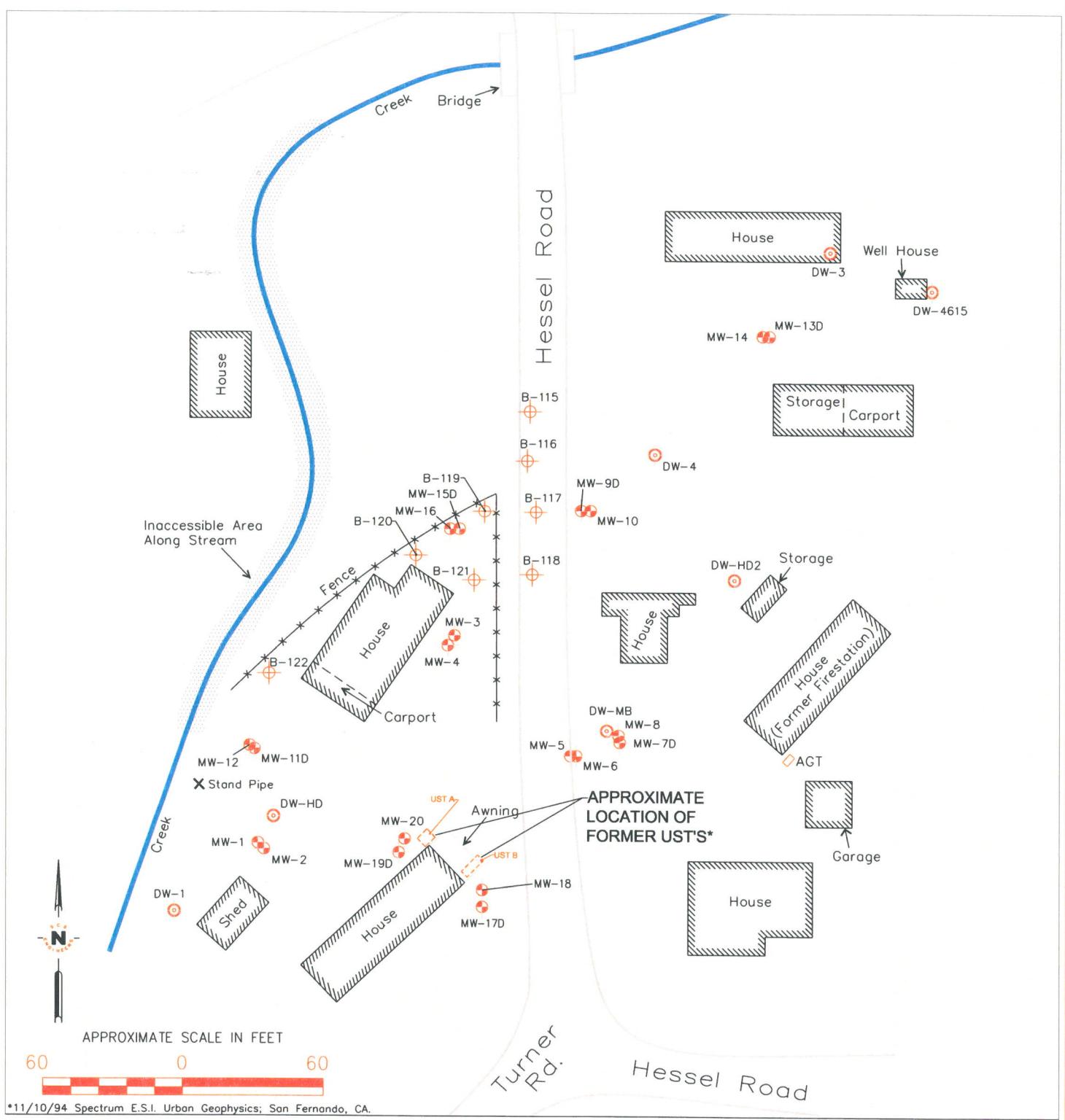
JOHN RIDDELL  
4660 HESSEL ROAD  
SEBASTOPOL, CALIFORNIA

SCALE:

1" = 20'

FIGURE NO.

6

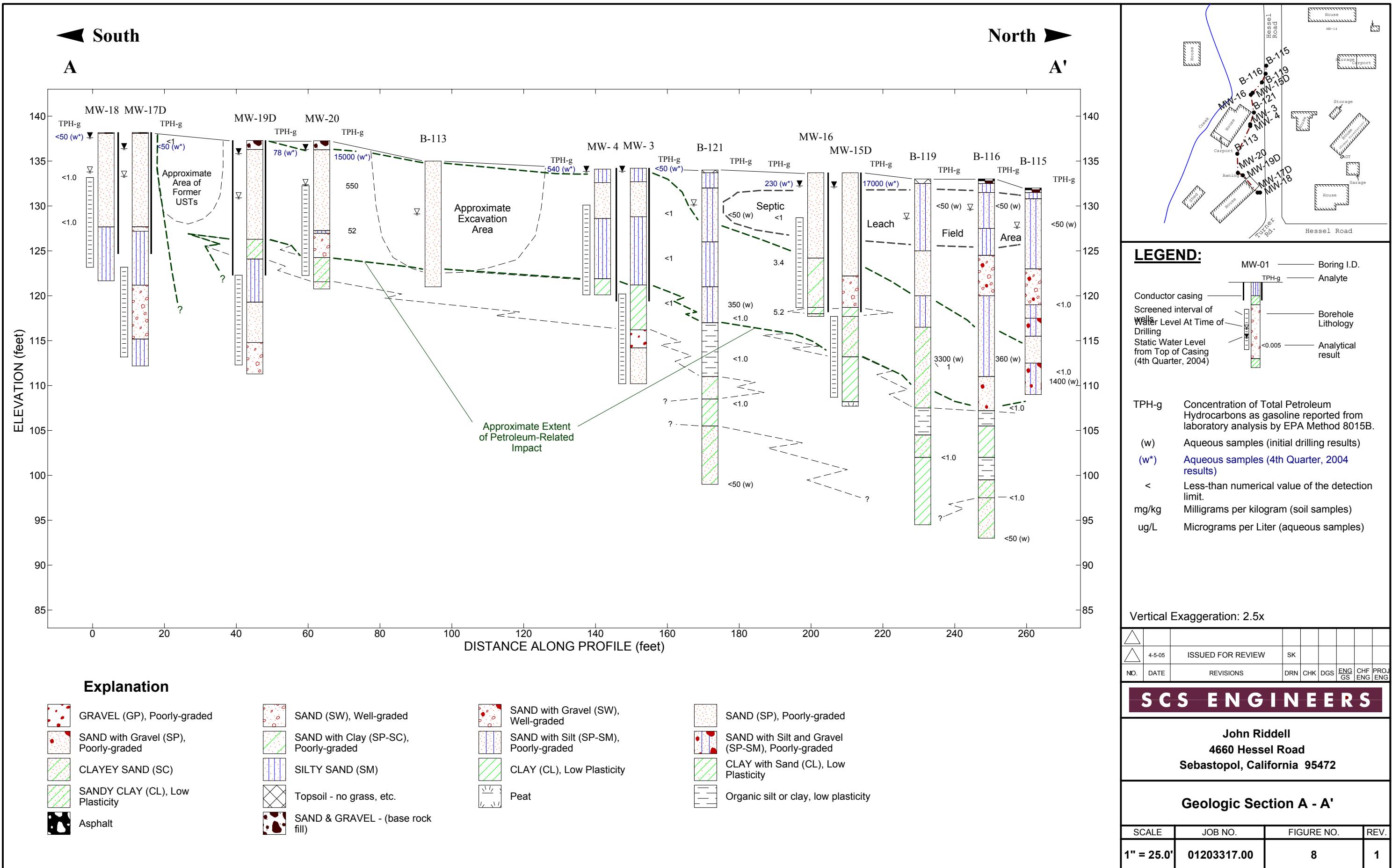


#### LEGEND

- Boring Location
- Monitoring Well Location
- Water Supply Well (DW=Domestic Well; HD=Hand Dug)
- UST A = 290 GALLON CAPACITY (GASOLINE)
- UST B = 575 GALLON CAPACITY (GASOLINE)

<b>S C S E N G I N E E R S</b>		
ENVIRONMENTAL CONSULTANTS		
3645 WESTWIND BOULEVARD SANTA ROSA, CALIFORNIA 94503 PH. (707) 946-5461 FAX. (707) 544-5769		
PROJ. NO.	DRAWN BY:	ACAD FILE: 3317-00-SP-B's 115-122_4-05
DATE	CHK. BY:	APP. BY: KLC

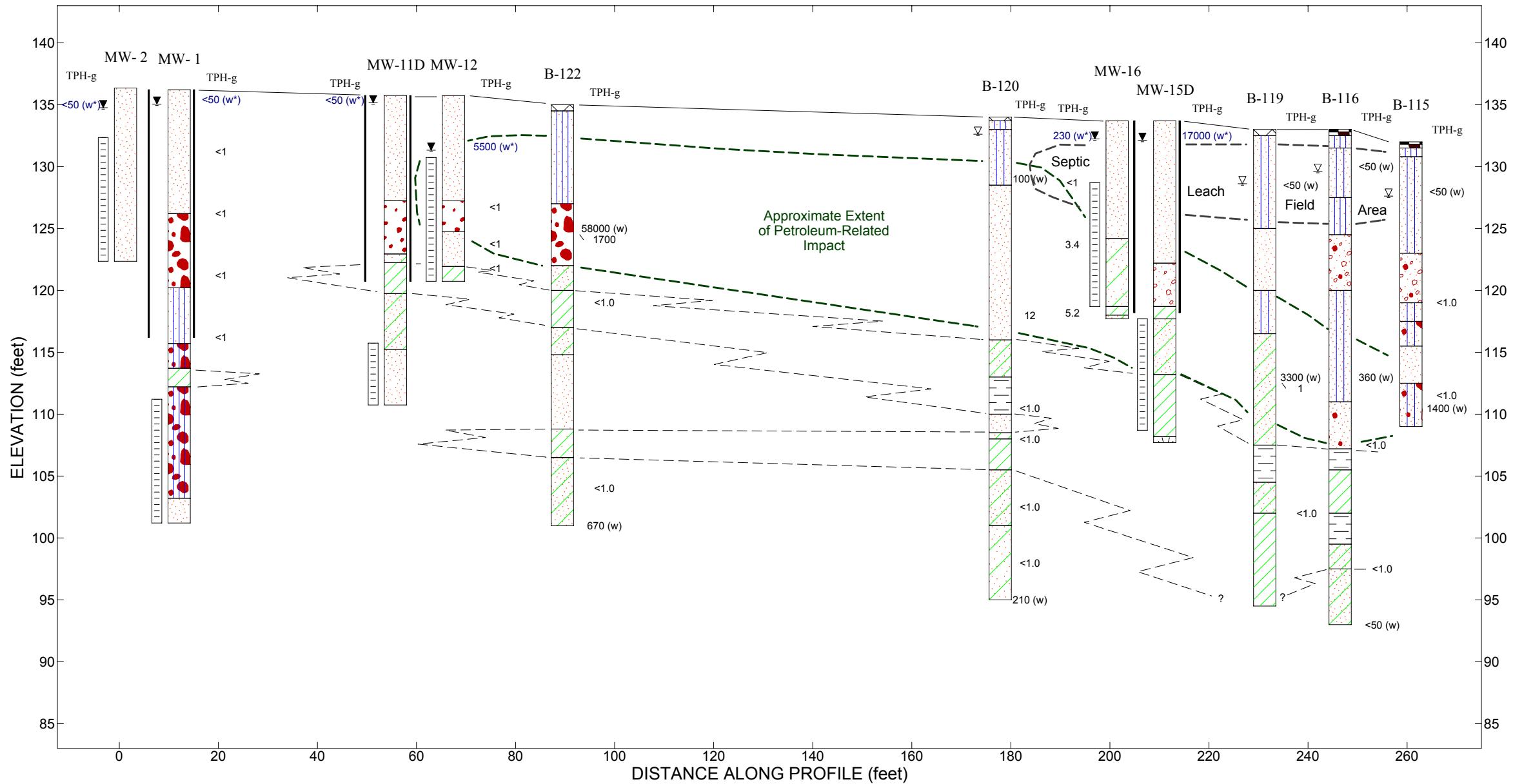
SHEET TITLE: SITE PLAN WITH MONITORING WELL AND BORING LOCATIONS		
PROJECT TITLE: JOHN RIDDELL 4660 HESSEL ROAD SEBASTOPOL, CALIFORNIA		
SCALE: 1" = 60'		
FIGURE NO. 7		



◀ South Southeast

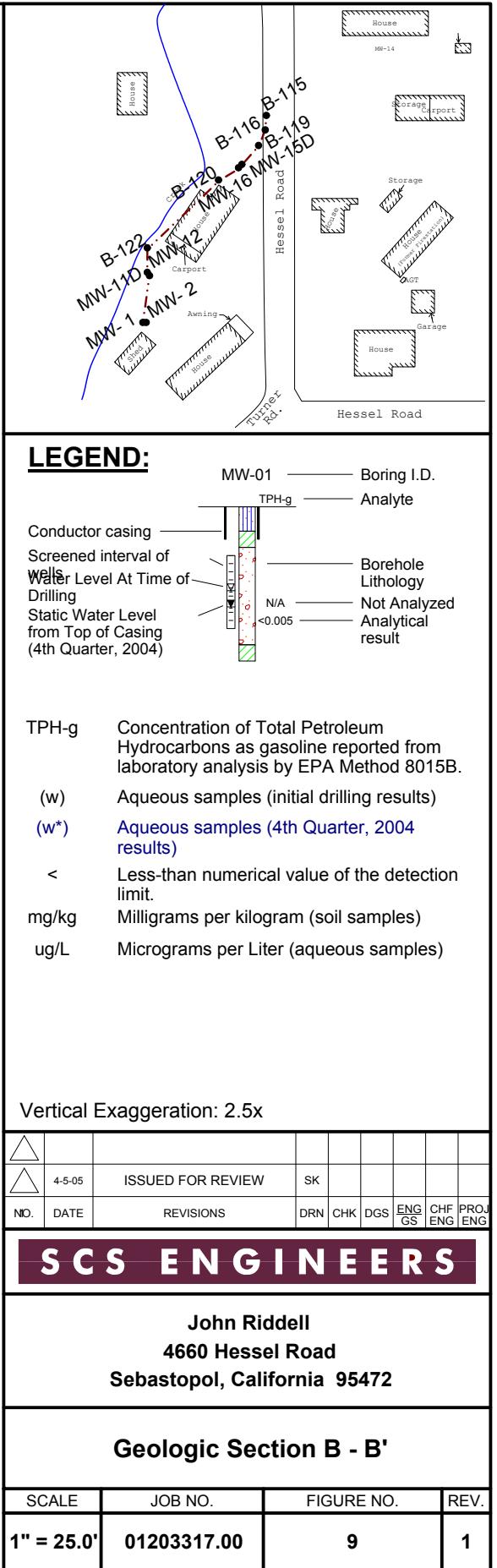
North ▶

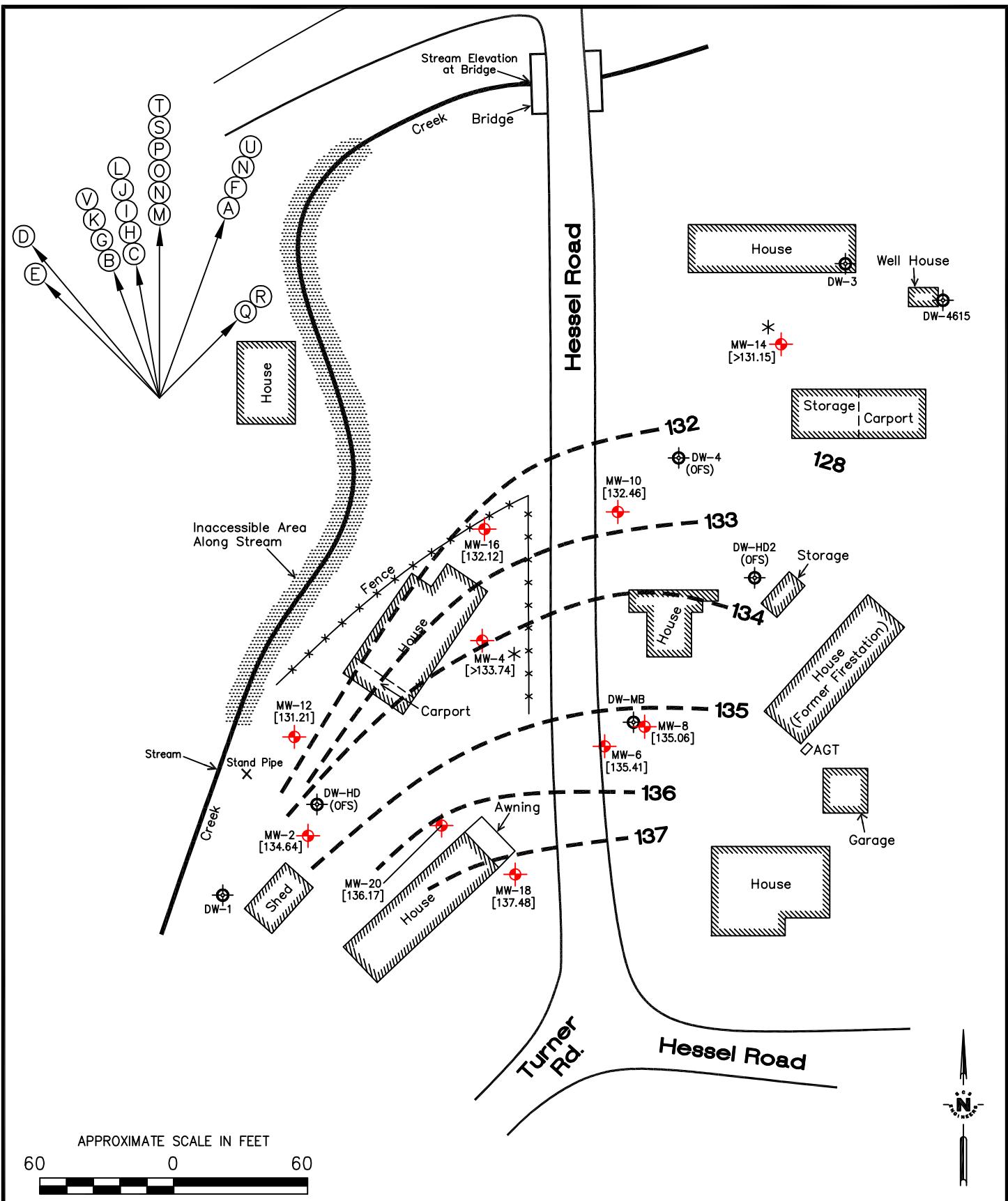
B



**Explanation**

GRAVEL (GW), Well-graded	GRAVEL (GP), Poorly-graded	SILTY GRAVEL (GM)	SAND (SW), Well-graded
SAND with Gravel (SW), Well-graded	SAND (SP), Poorly-graded	SAND with Gravel (SP-SC), Poorly-graded	SAND with Clay (SP-SC), Poorly-graded
SAND with Silt (SP-SM), Poorly-graded	SAND with Silt and Gravel (SP-SM), Poorly-graded	CLAYEY SAND (SC)	SILTY SAND (SM)
CLAY (CL), Low Plasticity	CLAY with Sand (CL), Low Plasticity	SANDY CLAY (CL), Low Plasticity	Topsoil - no grass, etc.
Peat	Organic silt or clay, low plasticity	Asphalt	SAND & GRAVEL - (base rock fill)





## **GROUNDWATER FLOW LEGEND**

- Water Supply Well
- Monitoring Well Location

DW = Domestic Well

HD = Hand Dug

OFS = Out of Service

NOTE: Drillings denoted in red used to determine flow direction and gradient

- \* Artesian conditions  
(groundwater level at top of well casing)

**SCS ENGINEERS**

## ENVIRONMENTAL CONSULTANTS

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PH. (707) 546-9461 FAX. (707) 544-5769

PROJ. NO.:	3317.00	DWN. BY:	ALP	ACAD FILE#:	3317.00-GW.SV-3432
DATE:	7/22/05	CHK. BY:		APP. BY:	CC-L

DATE:	3/28/05	CHK. BY:	APP. BY:	GSJ
-------	---------	----------	----------	-----

SHEET TITLE: SITE PLAN

GROUNDWATER FLOW DIRECTION & GRADIENT, SHALLOW WELLS, 1/4/05

**SCALE:**

$$1'' = 60'$$

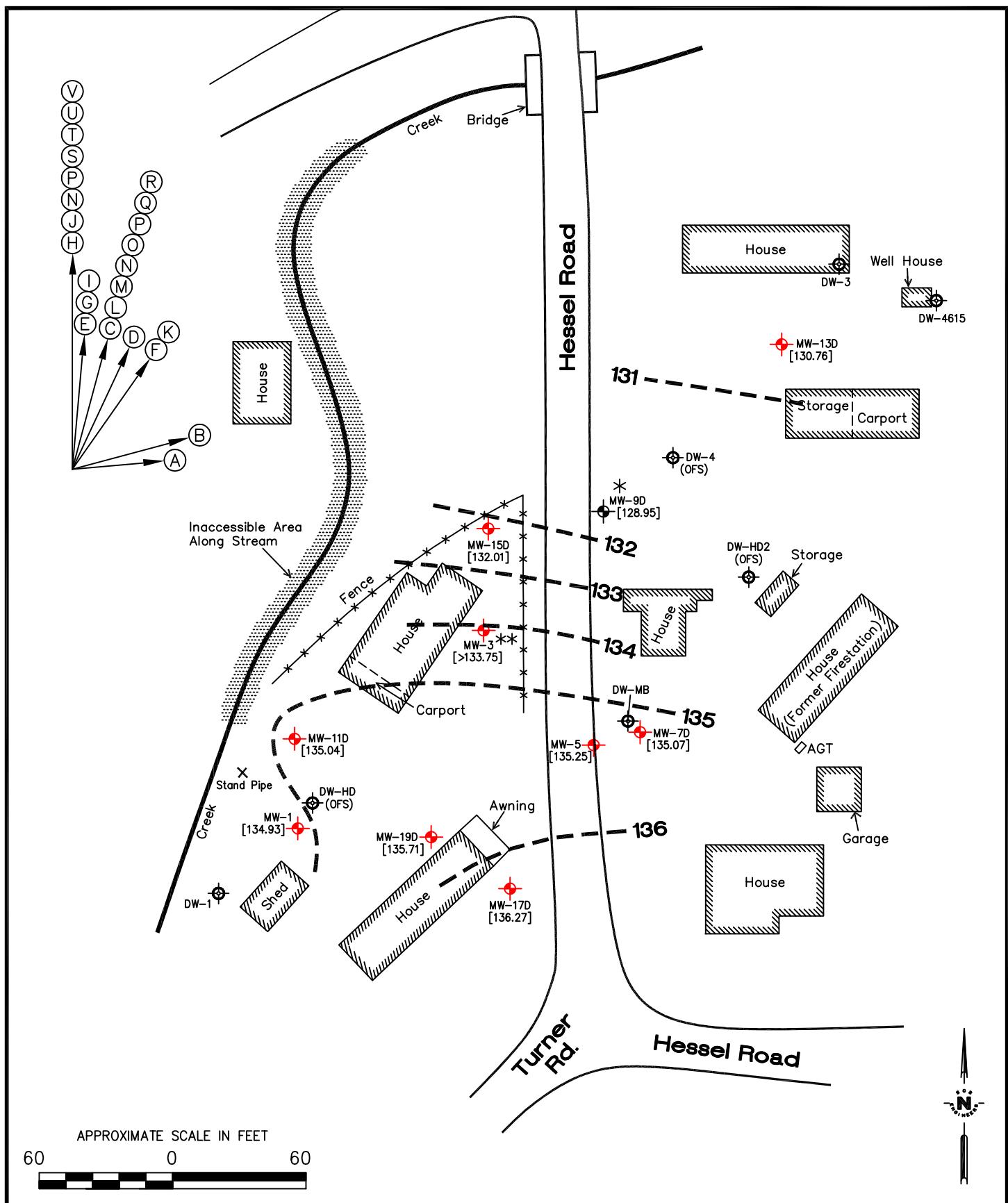
**PROJECT TITLE:**

JOHN RIDDELL

4660 HESSEL ROAD  
SEBASTOPOL, CALIFORNIA

**FIGURE NO.:**

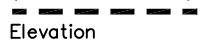
2 OF 2



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SANTA ROSA, CALIFORNIA 95403  
PH. (707) 546-9461 FAX. (707) 544-5769  
PROJ. NO.: 3317.00 DWN. BY: ALP ACAD FILE: 3317.00-GW.DV-3432  
DATE: 1/4/05 CHK. BY: APP. BY: GSJ

SHEET TITLE: GROUNDWATER FLOW DIRECTION & GRADIENT - DEEP WELLS, 1/4/05	SCALE: 1" = 60'
PROJECT TITLE: JOHN RIDDELL 4660 HESSEL ROAD SEBASTOPOL, CALIFORNIA	FIGURE NO.: 1 OF 2

## GROUNDWATER FLOW LEGEND

Estimated Groundwater Gradient Direction      Gradient Contour (Interval = 1.0 ft)  
      

**Elevation**

Identifier Tag      Date      Est Flow Direction      Gradient Slope

(A) 7/12/99 N85°E i = 0.02

(B) 10/20/99 N75°E i = 0.03

(C) 1/11/00 N15°E i = 0.02

(D) 4/18/00 Not Calculated

(E) 7/20/00 N5°E i = 0.02

(F) 11/7/00 N35°E i = 0.025

(G) 2/28/01 N5°E i = 0.02

(H) 5/29/01 North i = 0.05

(I) 8/22/01 N5°E i = 0.04

(J) 11/26/01 North i = 0.03

(K) 2/25/02 N35°E i = 0.03

(L) 5/29/02 N-NE i = 0.02

(M) 8/26/02 N-NE i = 0.02

(N) 11/19/02 N-NE i = 0.02

(O) 2/18/03 N-NE i = 0.05

(P) 5/14/03 N-NE i = 0.02

(Q) 8/20/03 N-NE i = 0.02

(R) 11/20/03 N-NE i = 0.02

(S) 3/2/04 Northerly i = 0.04

(T) 6/7/04 N-NE i = 0.04

(U) 9/2/04 Northerly i = 0.03

(V) 1/4/05 Northerly i = 0.03

 Water Supply Well

 Monitoring Well Location

DW = Domestic Well

HD = Hand Dug

OFS = Out of Service

NOTE: Drillings denoted in red used to determine flow direction and gradient

\* MW-9D not used to determine GW Flow Direction & Gradient.

\*\* Artesian conditions (groundwater level at top of well casing)

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PROJ. NO.: 3317.00 DWN. BY: ALP ACAD FILE: 3317.00-GW.DV-3432

DATE: 1/4/05 CHK. BY: APP. BY: GSJ

SHEET TITLE: SITE PLAN

GROUNDWATER FLOW DIRECTION & GRADIENT - DEEP WELLS, 1/4/05

SCALE:

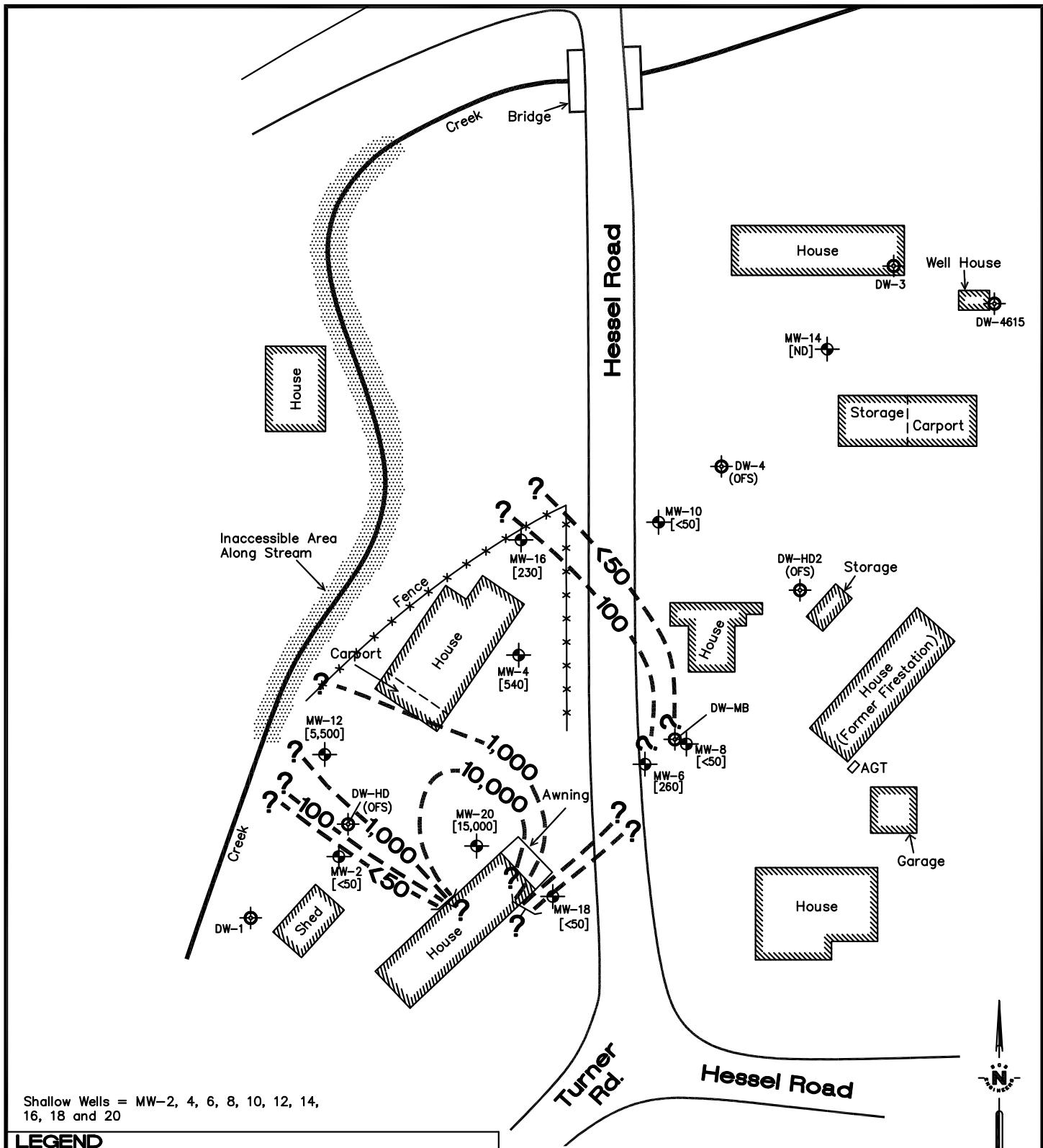
1" = 60'

PROJECT TITLE:

JOHN RIDDELL  
4660 HESSEL ROAD  
SEBASTOPOL, CALIFORNIA

FIGURE NO.:

2 OF 2



Shallow Wells = MW-2, 4, 6, 8, 10, 12, 14,  
16, 18 and 20

#### LEGEND

Monitoring Well Location	Water Supply Well
Isoconcentration Line	DW = Domestic Well
TPH-g, ug/L	HD = Hand Dug
	OFS = Out of Service

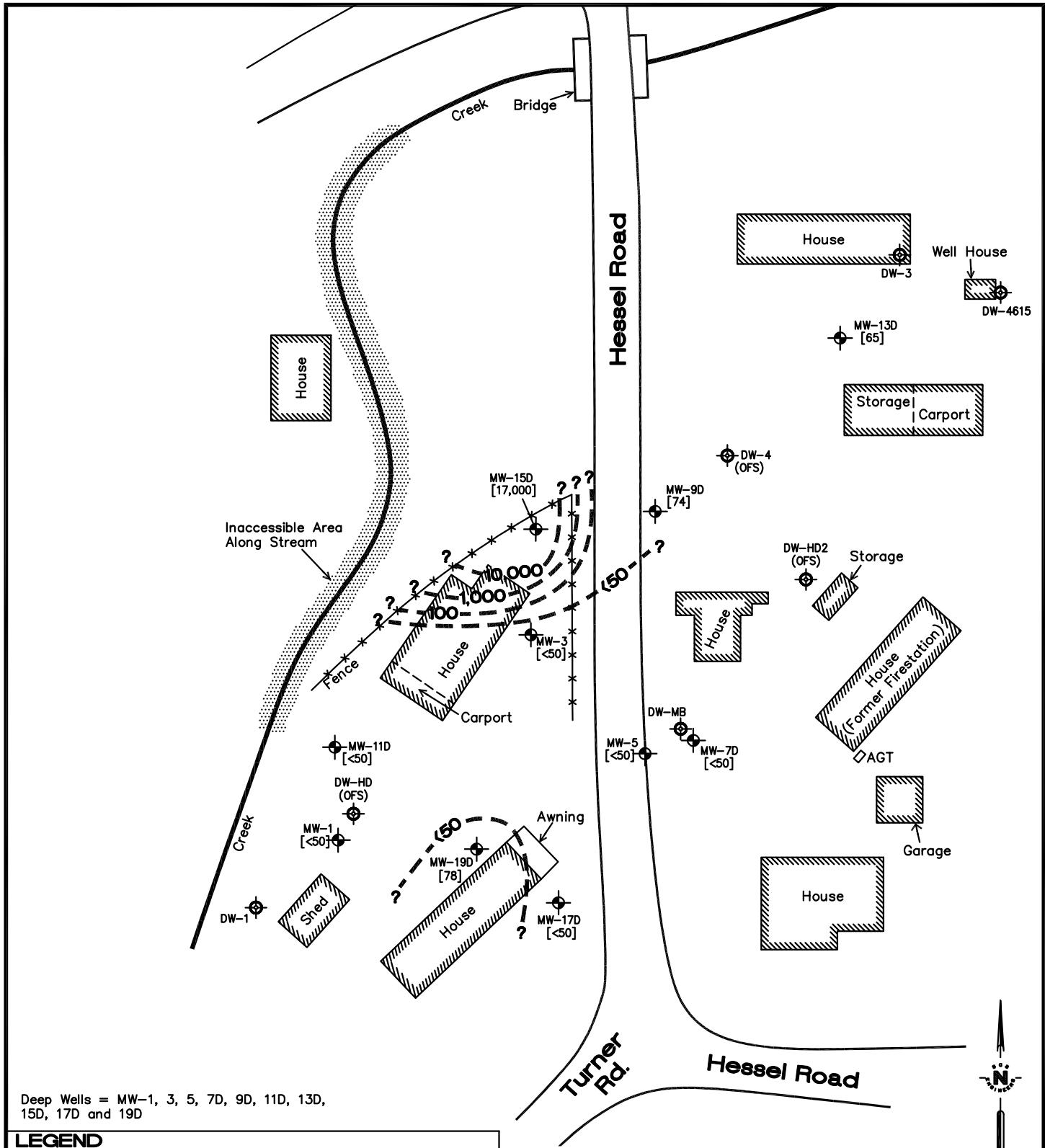
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SANTA ROSA, CALIFORNIA 95403  
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PROJ. NO.: 3317.00	DWN. BY: AJH	ACAD FILE: 3317.00-IS03A-3422
DATE: 3/14/05	CHK. BY:	APP. BY: SK

SHEET TITLE: ISOCONCENTRATION MAP TPH-G IN SHALLOW WELLS FOR JANUARY 2005	SCALE: 1" = 60'
PROJECT TITLE: JOHN RIDDELL 4660 HESSEL ROAD SEBASTOPOL, CALIFORNIA	FIGURE NO.:



Deep Wells = MW-1, 3, 5, 7D, 9D, 11D, 13D,  
15D, 17D and 19D

---

**LEGEND**

-  Monitoring Well Location     
  Water Supply Well  
 — Isoconcentration Line      DW = Domestic Well  
 TPH-g, ug/L      HD = Hand Dug  
 OFS = Out of Service

APPROXIMATE SCALE IN FEET

A horizontal number line representing integers from -60 to 60. The line is marked with tick marks every 10 units. The origin is explicitly labeled with the number 0. On the left side of the origin, the label -60 is placed above the line. On the right side of the origin, the label 60 is placed above the line.

SCS ENGINEERS

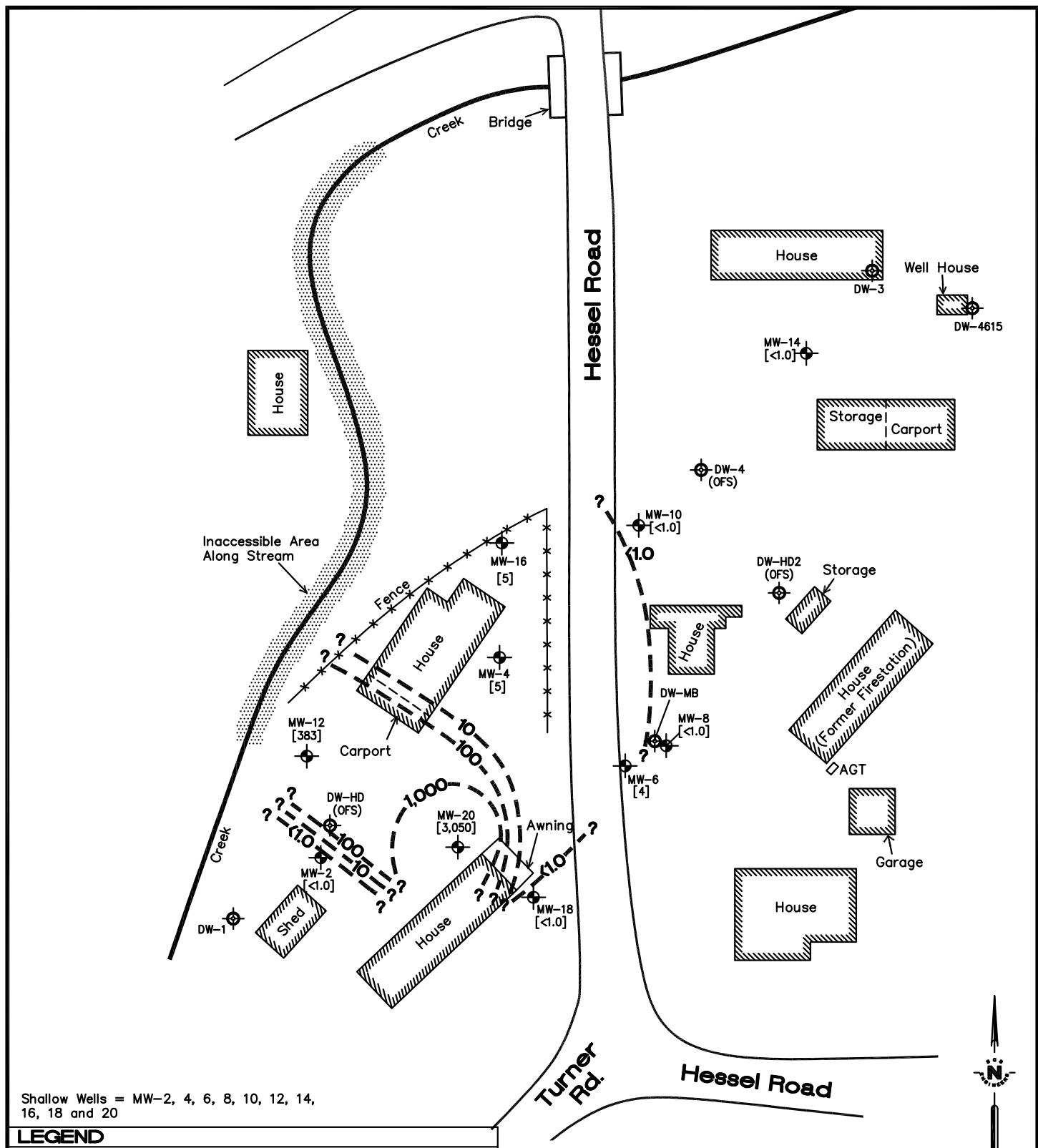
**ENVIRONMENTAL CONSULTANTS**  
3645 WESTWIND BOULEVARD  
SANTA ROSA, CALIFORNIA 95403  
PH. (707) 546-9461 FAX. (707) 544-5769

PROJ. NO.:	3317.00	DWN. BY:	AJH	ACAD FILE:	3317.00-IS03B-3422
DATE:	3/14/05	CHK. BY:		APP. BY:	SK

SHEET TITLE: ISOCONCENTRATION MAP  
TPH-G IN DEEP WELLS FOR JANUARY 2005

PROJECT TITLE: JOHN RIDDELL  
4660 HESSEL ROAD  
SEBASTOPOL, CALIFORNIA

**SCALE:**



Shallow Wells = MW-2, 4, 6, 8, 10, 12, 14,  
16, 18 and 20

#### LEGEND

- |                            |                      |
|----------------------------|----------------------|
| ● Monitoring Well Location | ● Water Supply Well  |
| — Isoconcentration Line    | DW = Domestic Well   |
| ΣBTEX, ug/L                | HD = Hand Dug        |
|                            | OFS = Out of Service |

APPROXIMATE SCALE IN FEET



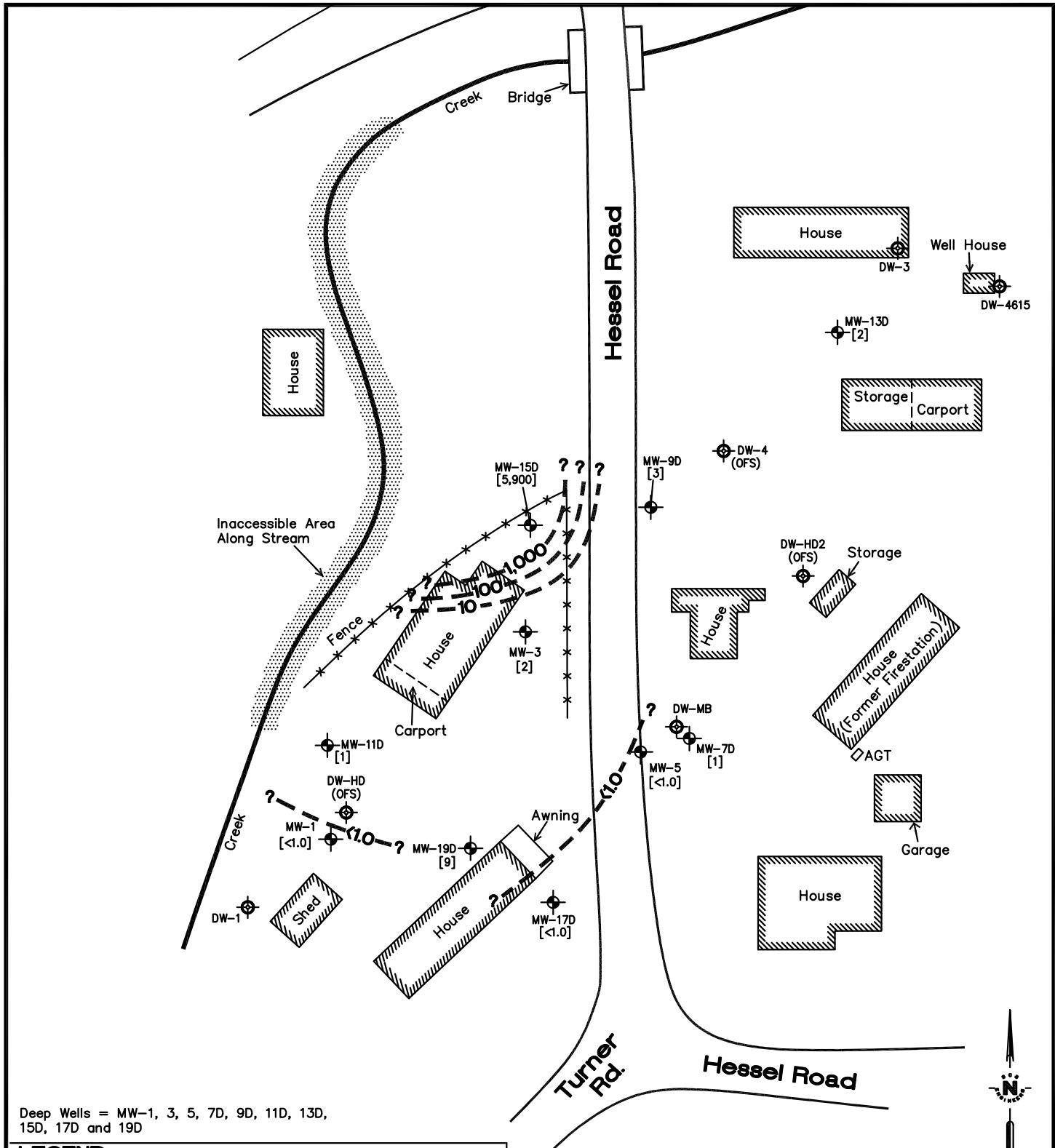
**SCS ENGINEERS**  
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SANTA ROSA, CALIFORNIA 95403  
PH. (707) 546-9461 FAX. (707) 544-5769

PROJ. NO.: 3317.00	DWN. BY: AJH	ACAD FILE: 3317.00-IS04A-3422
DATE: 3/14/05	CHK. BY:	APP. BY: SK

SHEET TITLE: ISOCONCENTRATION MAP  
BTEX IN SHALLOW WELLS FOR JANUARY 2005

PROJECT TITLE: JOHN RIDDELL  
4660 HESSEL ROAD  
SEBASTOPOL, CALIFORNIA

SCALE: 1" = 60'  
FIGURE NO.:



Deep Wells = MW-1, 3, 5, 7D, 9D, 11D, 13D, 15D, 17D and 19D

---

**LEGEND**

-  Monitoring Well Location       Water Supply Well  
 Isoconcentration Line      DW = Domestic Well  
 $\Sigma$ BTEX, ug/L      HD = Hand Dug  
 $\Sigma$ BTEX, ug/L      OFS = Out of Service

APPROXIMATE SCALE IN FEET

A horizontal scale with numerical labels at -60, 0, and 60. The scale is marked with vertical grid lines corresponding to these values. The segment between -60 and 0 is shaded black, while the segment between 0 and 60 is white.

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SANTA ROSA, CALIFORNIA 95403  
PH. (707) 546-9461 FAX. (707) 544-5769

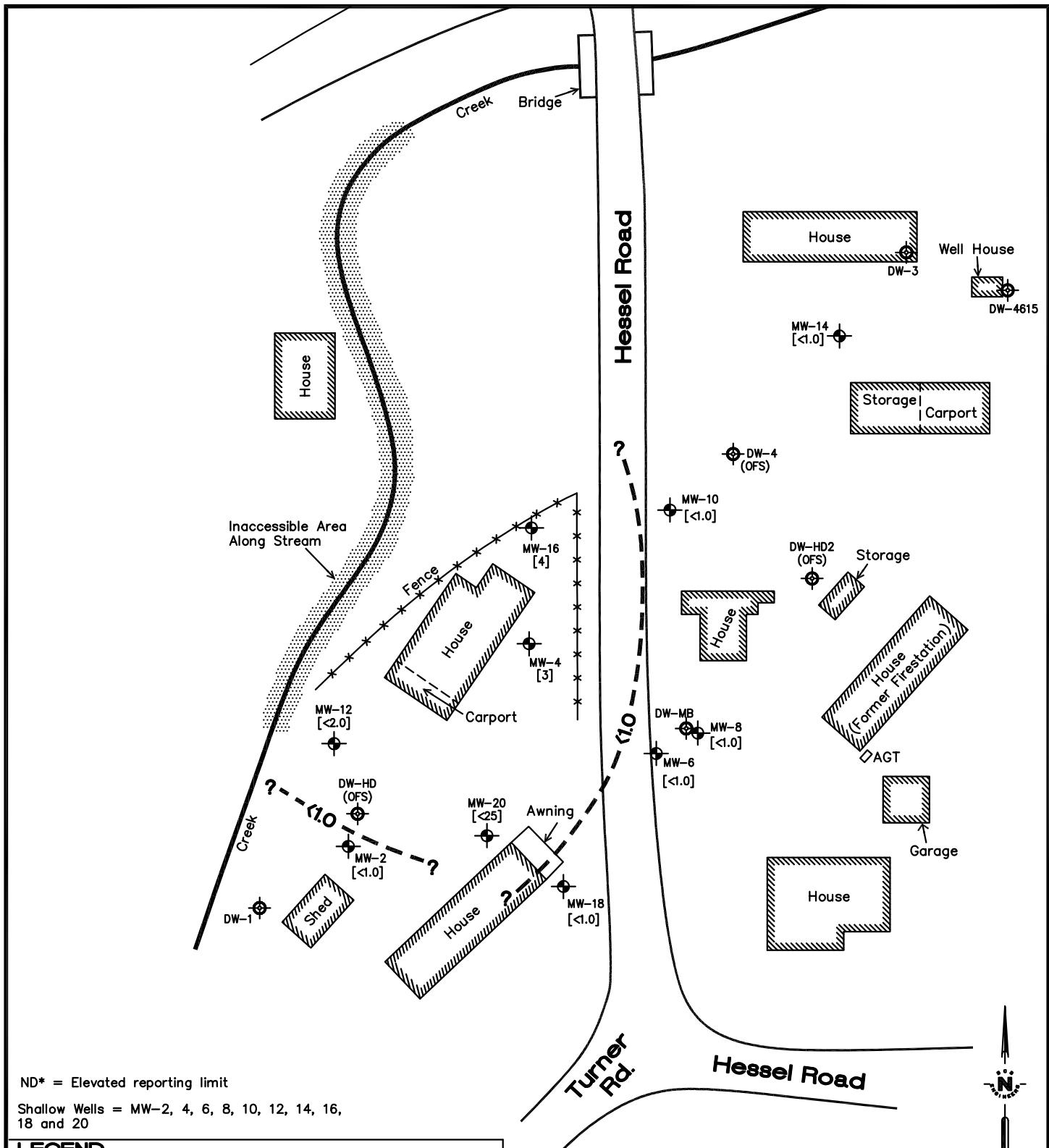
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DATE:	3/14/05	CHK. BY:		APP. BY:	SK

SHEET TITLE: ISOCONCENTRATION MAP  
BTEX IN DEEP WELLS FOR JANUARY 2005

**PROJECT TITLE:**

JOHN RIDDELL  
4660 HESSEL ROAD  
SEBASTOPOL, CALIFORNIA

SCALE:  
1" = 60'



ND\* = Elevated reporting limit

Shallow Wells = MW-2, 4, 6, 8, 10, 12, 14, 16, 18 and 20

#### LEGEND

- |                            |                      |
|----------------------------|----------------------|
| ● Monitoring Well Location | ● Water Supply Well  |
| — Isoconcentration Line    | DW = Domestic Well   |
| 1,2-EDC, ug/L              | HD = Hand Dug        |
|                            | OFS = Out of Service |

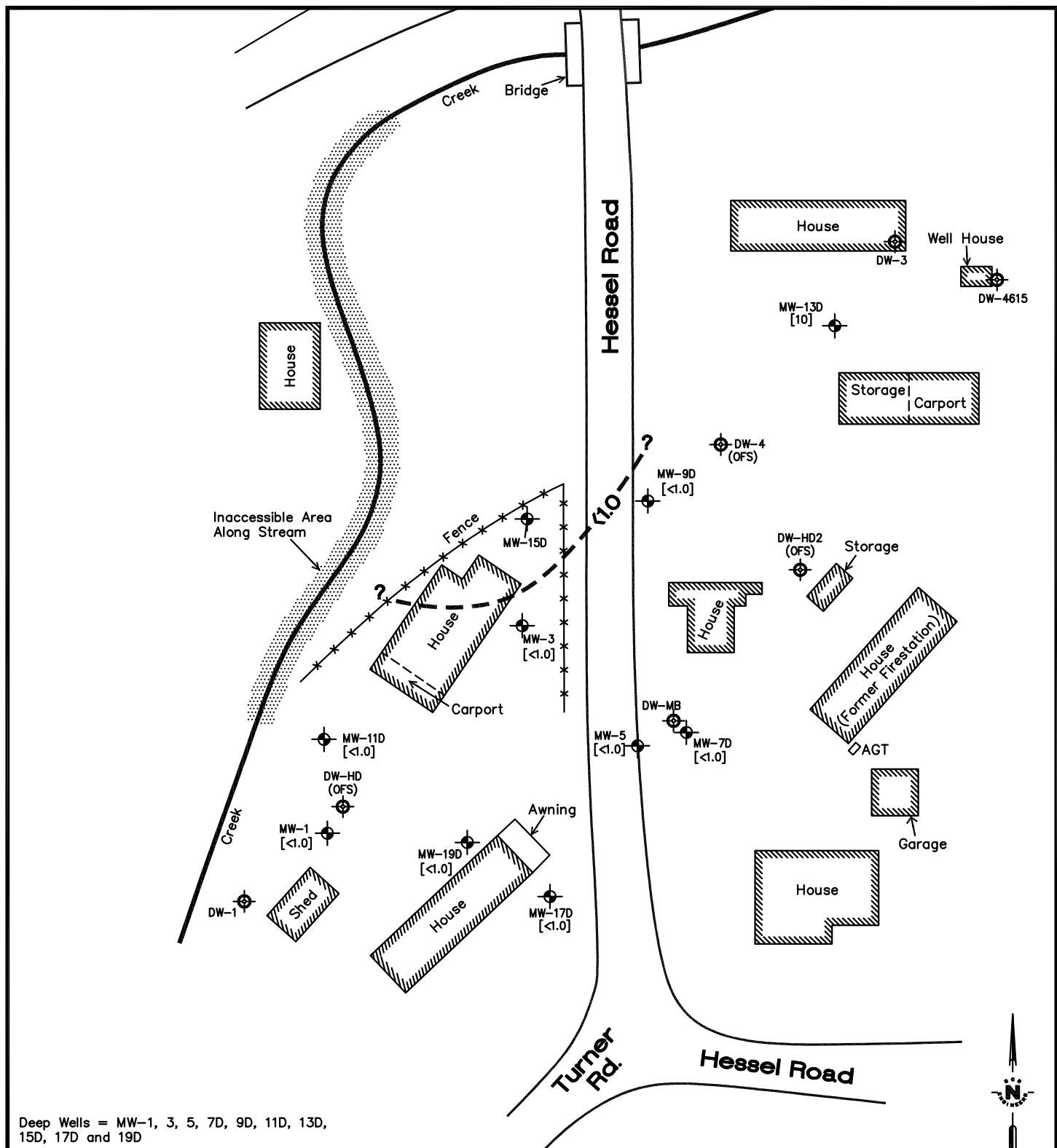
APPROXIMATE SCALE IN FEET



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PH. (707) 546-9461 FAX. (707) 544-5769  
PROJ. NO.: 3317.00 DWN. BY: AJH ACAD FILE: 3317.00-IS05A-3422  
DATE: 3/14/05 CHK. BY: APP. BY: SK

SHEET TITLE: ISOCONCENTRATION MAP  
EDC IN SHALLOW WELLS FOR JANUARY 2005  
PROJECT TITLE: JOHN RIDDELL  
4660 HESSEL ROAD  
SEBASTOPOL, CALIFORNIA

SCALE: 1" = 60'  
FIGURE NO.:



Deep Wells = MW-1, 3, 5, 7D, 9D, 11D, 13D, 15D, 17D and 19D

#### LEGEND

Monitoring Well Location	Water Supply Well
Isoconcentration Line 1,2-EDC, ug/L	
	DW = Domestic Well
	HD = Hand Dug
	OFS = Out of Service

APPROXIMATE SCALE IN FEET



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PROJ. NO.:	3317.00	DWN. BY:	AJH	ACAD FILE:	3317.00-IS05B-3422
DATE:	3/14/05	CHK. BY:		APP. BY:	SK

SHEET TITLE: ISOCONCENTRATION MAP  
EDC IN DEEP WELLS FOR JANUARY 2005

SCALE:  
1" = 60'

PROJECT TITLE: JOHN RIDDELL  
4660 HESSEL ROAD  
SEBASTOPOL, CALIFORNIA

FIGURE NO.:

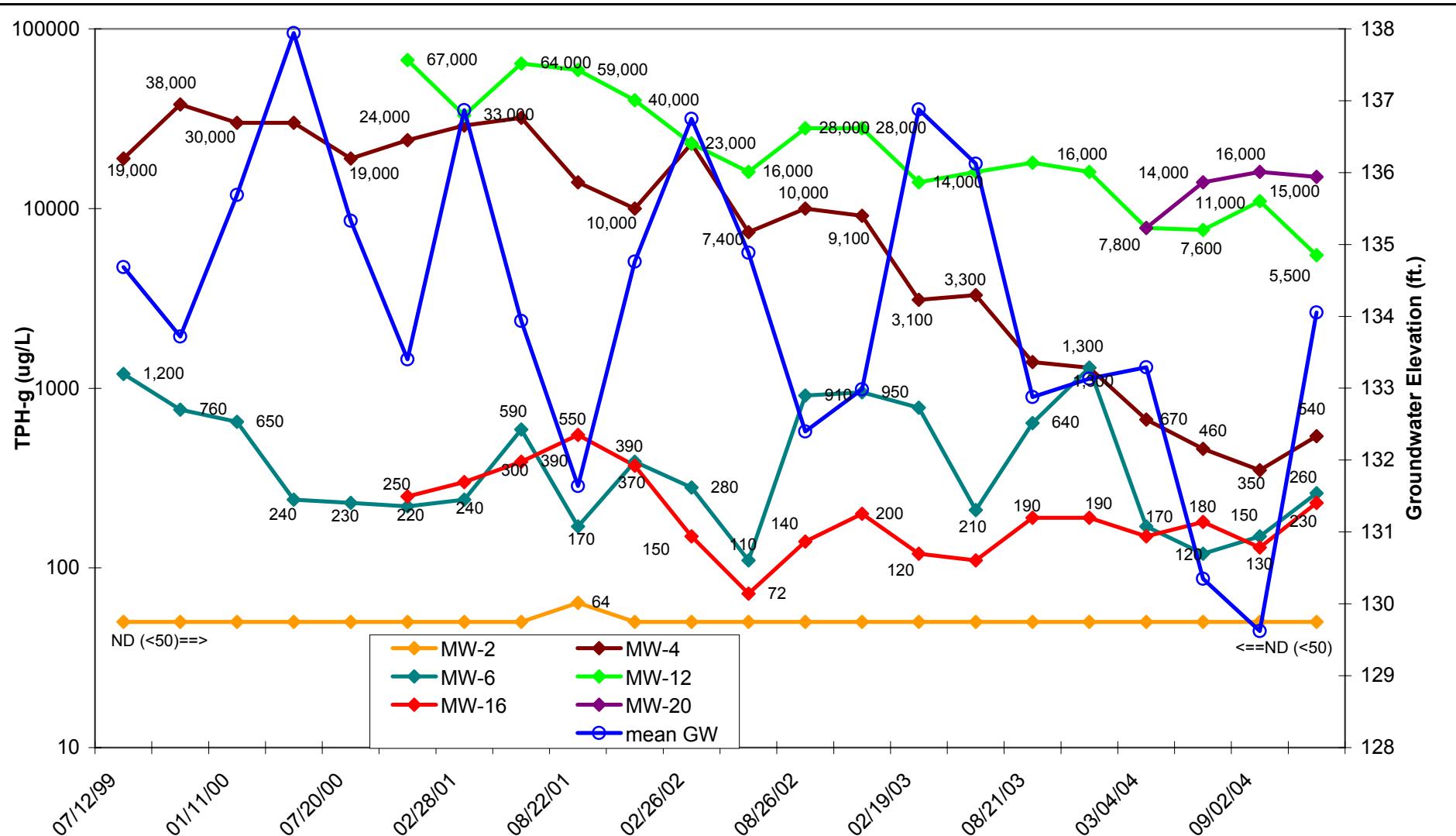
**Key to Diagrams and Tables**  
**4660 Hessel Road, Sebastopol**

TPH-g	=	Total petroleum hydrocarbons in the gasoline range
TPH-d	=	Total petroleum hydrocarbons in the diesel range
TPH-mo	=	Total petroleum hydrocarbons in the motor oil range
TPH-k	=	Total petroleum hydrocarbons in the kerosene range
B	=	Benzene
T	=	Toluene
E	=	Ethylbenzene
X	=	Xylenes
MTBE	=	Methyl tertiary butyl ether
DIPE	=	Diisopropyl ether
ETBE	=	Ethyl tertiary butyl ether
TAME	=	Tertiary amyl methyl ether
TBA	=	Tert-butyl alcohol
Five Oxys	=	Five ether-based oxygenates (MTBE, DIPE, ETBE, TAME, TBA)
EDC	=	Ethylene dichloride <sup>2</sup>
EDB	=	Ethylene dibromide <sup>3</sup>
Pb Scavs	=	Lead scavengers (EDC, EDB)
VOCs	=	Volatile Organic Compounds
$\mu\text{g/L}$	=	Micrograms per liter
RDL	=	Report detection limit
ND	=	Below the laboratory report detection limit
NA	=	Not analyzed
msl	=	Mean sea level
INF	=	Influent
EFF	=	Effluent

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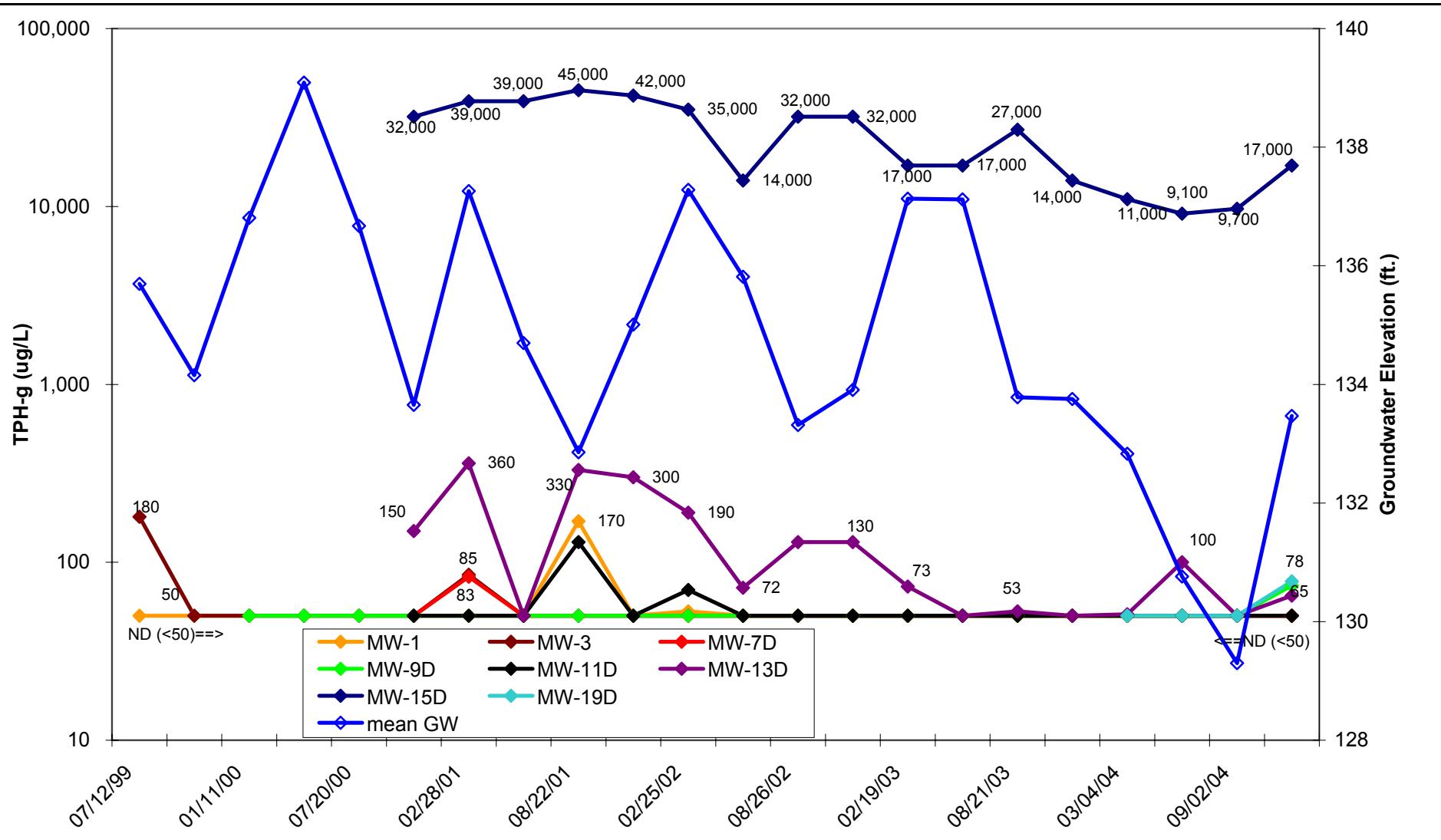
<sup>2</sup> EDC has been referred to as 1,2-dichloroethane (1,2-DCA) in previous reports.

<sup>3</sup> EDB has been referred to as 1,2-dibromoethane in previous reports.



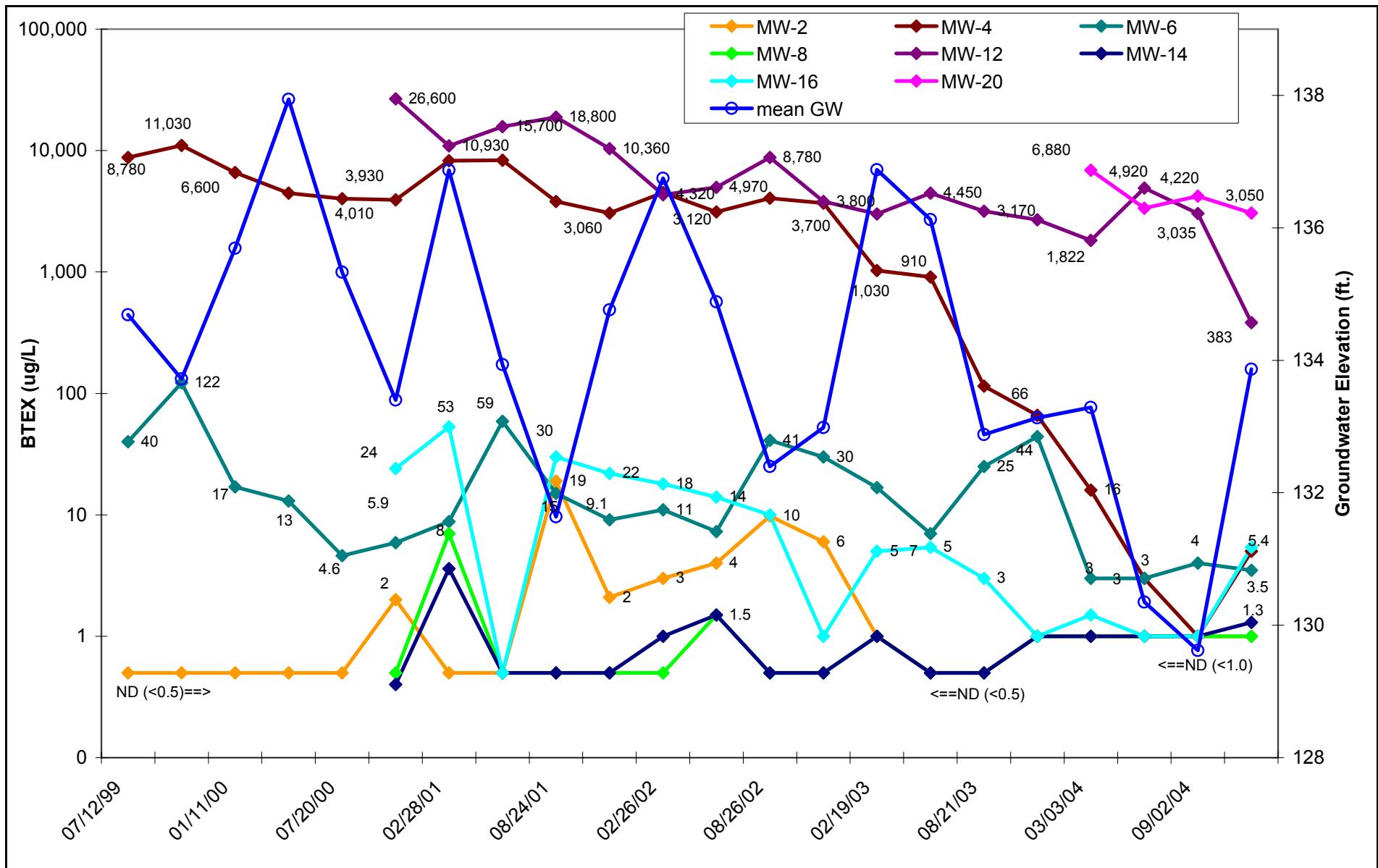
Note: Confirmation sample collected from MW-16 on December 30, 2002, as the sample collected on November 20, 2002 was actually collected from MW-15D but was mislabeled as MW-16.

SCS ENGINEERS	TPH-g & GROUNDWATER ELEVATION vs TIME - Shallow Wells	DIAGRAM
3645 WESTWIND BOULEVARD SANTA ROSA, CALIFORNIA Drawn By: KLC	John Riddell 4660 Hessel Road, Sebastopol, California File Name: TPH-g-GW Job Number: 01203317.00	A DATE: 01/19/05



Note: Confirmation sample collected from MW-16 on December 30, 2002, as the sample collected on November 20, 2002 was actually collected from MW-15D but was mislabeled as MW-16.

SCS ENGINEERS	TPH-g & GROUNDWATER ELEVATION vs TIME - Deep Wells	DIAGRAM
3645 WESTWIND BOULEVARD SANTA ROSA, CALIFORNIA Drawn By: KLC	John Riddell 4660 Hessel Road, Sebastopol, California File Name: TPH-g-GW Job Number: 01203317.00	B DATE: 01/19/05



**SCS ENGINEERS**

3645 WESTWIND BOULEVARD  
SANTA ROSA, CALIFORNIA

Drawn By: KLC

File Name: BTEX-GW

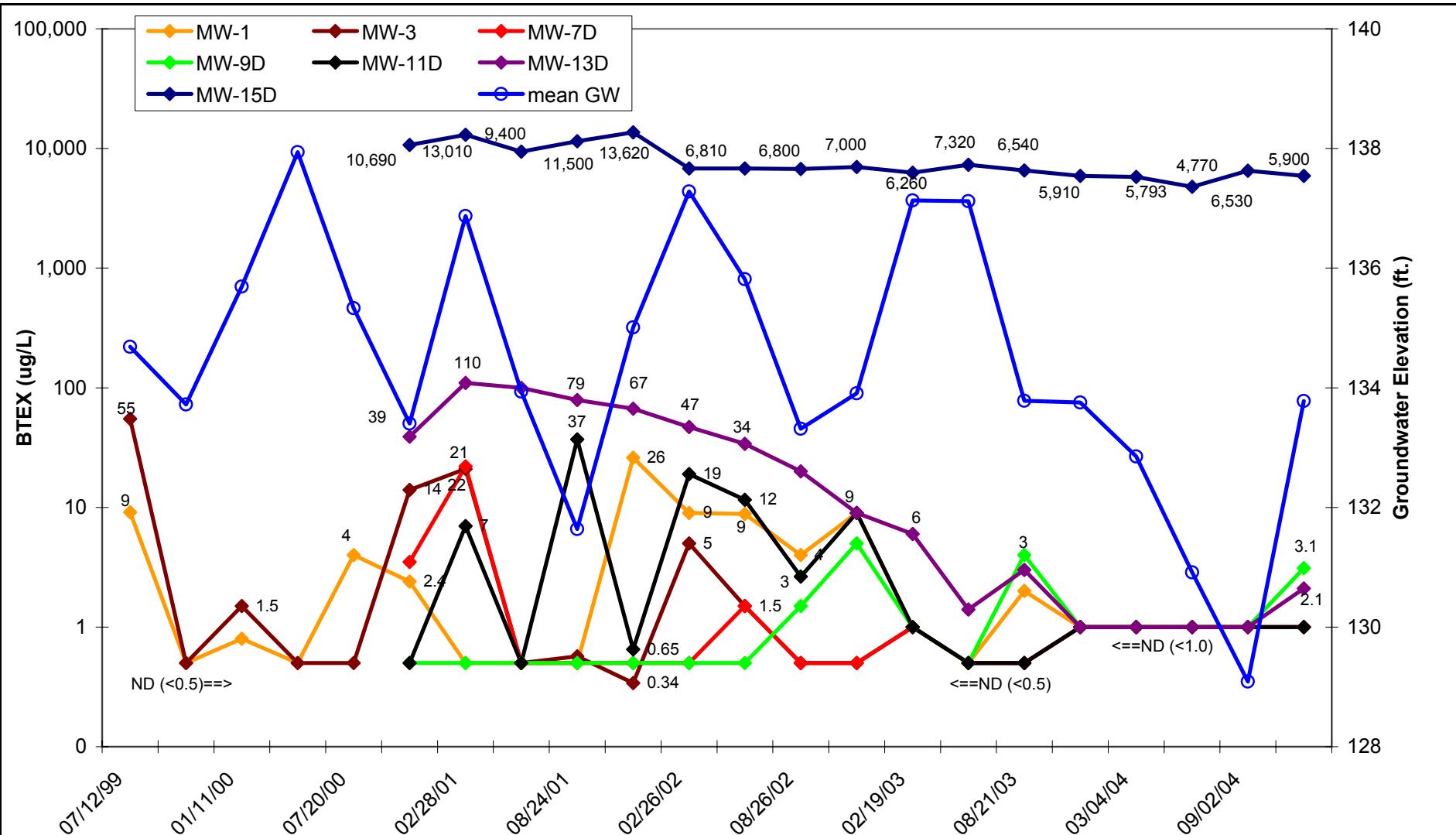
### **SBTEx & GROUNDWATER ELEVATION vs TIME - Shallow Wells**

John Riddell  
4660 Hessel Road, Sebastopol, California  
Job Number: 01203317.00

**DIAGRAM**

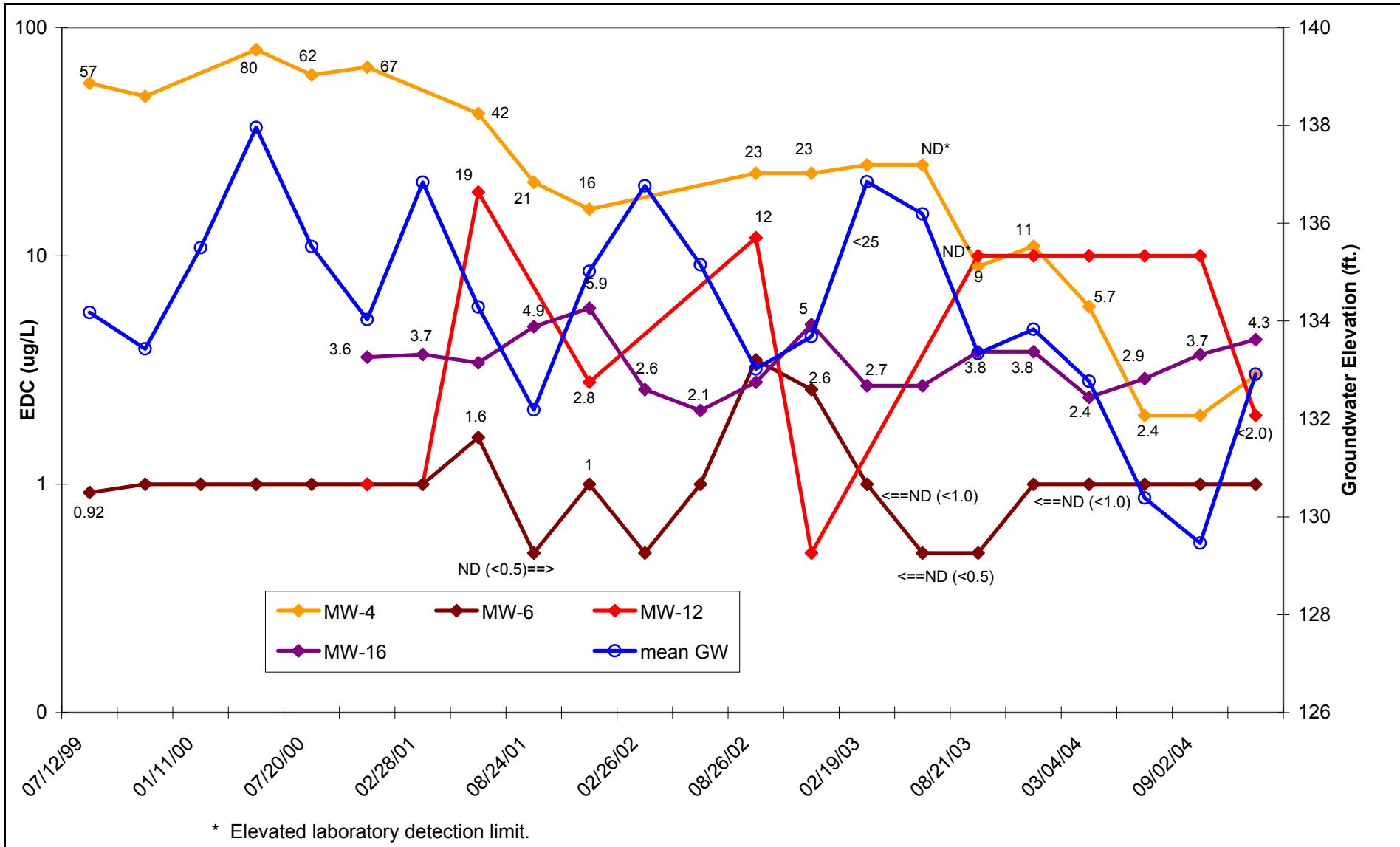
**C**

DATE: 01/19/05

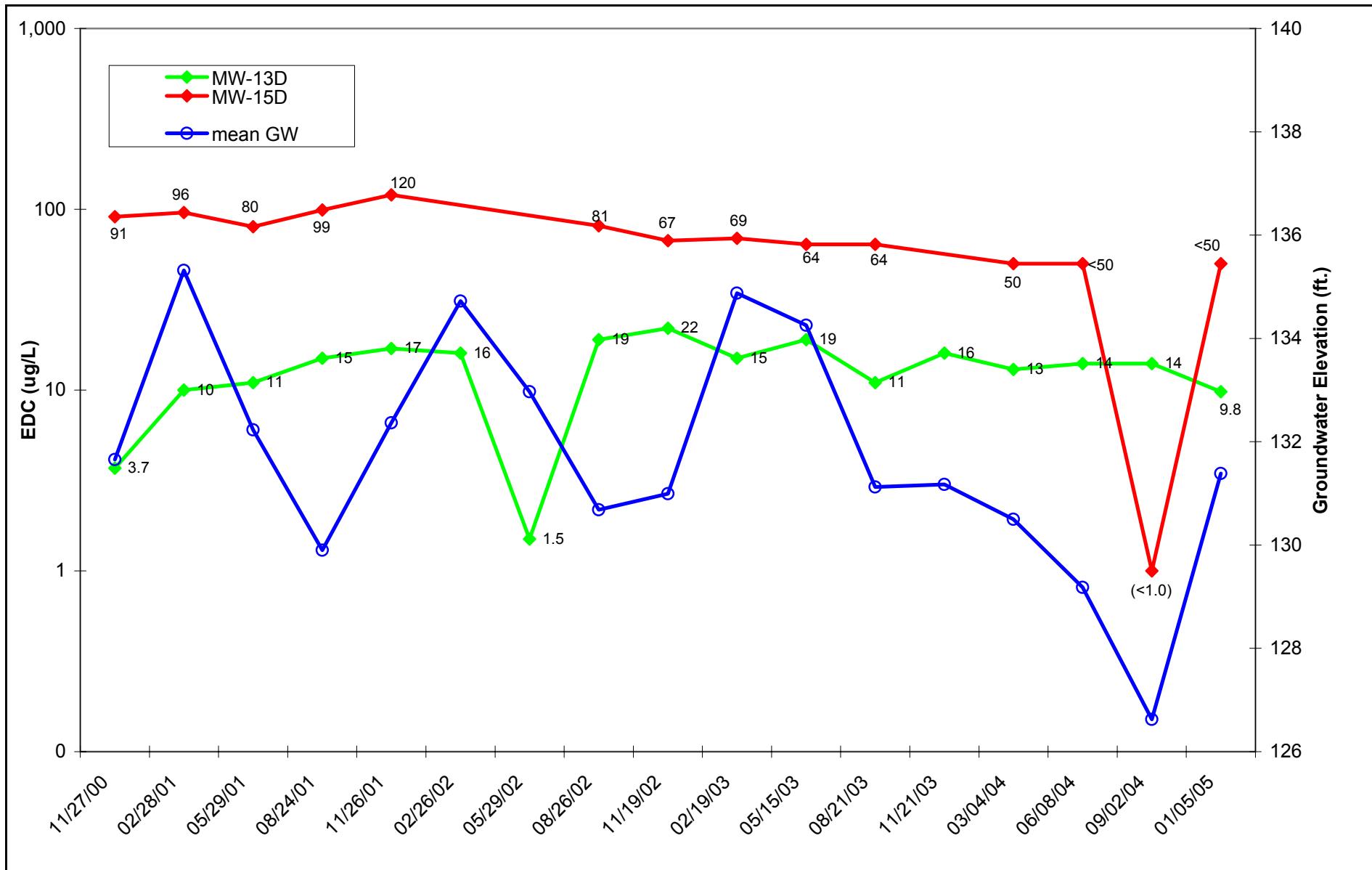


Note: Confirmation sample collected from MW-16 on December 30, 2002, as the sample collected on November 20, 2002 was actually collected from MW-15D but was mislabeled as MW-16.

SCS ENGINEERS	ΣBTEX & GROUNDWATER ELEVATION vs TIME - Deep Wells	DIAGRAM
3645 WESTWIND BOULEVARD SANTA ROSA, CALIFORNIA Drawn By: KLC	John Riddell 4660 Hessel Road, Sebastopol, California File Name: BTEX-GW Job Number: 01203317.00	D DATE: 01/19/05



SCS ENGINEERS	EDC & GROUNDWATER ELEVATION vs TIME - Shallow Wells	DIAGRAM
3645 WESTWIND BOULEVARD SANTA ROSA, CALIFORNIA Drawn By: KLC	John Riddell 4660 Hessel Road, Sebastopol, California File Name: EDC-GW Job Number: 01203317.00	E DATE: 01/19/05



SCS ENGINEERS	EDC & GROUNDWATER ELEVATION vs TIME - Deep Wells	DIAGRAM
3645 WESTWIND BOULEVARD SANTA ROSA, CALIFORNIA Drawn By: KLC	John Riddell 4660 Hessel Road, Sebastopol, California File Name: EDC-GW Job Number: 01203317.00	F DATE: 01/19/05

**Table 1: Partial Analytical Results from Shallow Sampling Activities - Soil  
4660 Hessel Road, Sebastopol**

Sample ID	Date	Depth	TPH-g	B	T	E	X
			-----mg/kg-----				
B-1	12/05/94	1.5	23	ND	ND	ND	ND
B-1	12/05/94	5.0	ND	ND	ND	ND	ND
B-2	12/05/94	1.5	ND	ND	ND	ND	ND
B-2	12/05/94	4.5	ND	ND	ND	0.0016	0.0092
B-3	03/07/95	2.5	ND	ND	ND	ND	ND
B-4	03/07/95	2.5	ND	ND	ND	ND	ND
B-5	03/07/95	2.5	ND	ND	ND	ND	ND
B-6	03/07/95	2.5	ND	ND	ND	ND	ND
B-7	03/07/95	2.5	ND	ND	ND	ND	ND
B-8	03/08/95	2.5	ND	ND	ND	ND	ND
B-11	03/07/95	2.0	ND	ND	ND	ND	ND
B-12	03/07/95	2.5	ND	ND	ND	ND	ND
B-16	03/08/95	1.5	ND	ND	ND	ND	ND
B-17	03/08/95	2.0	ND	ND	ND	ND	ND
B-18	03/08/95	2.5	ND	ND	ND	ND	ND
B-19	03/08/95	2.5	ND	ND	ND	ND	ND
B-20	03/08/95	2.0	ND	ND	ND	ND	ND
HTP-1	01/17/95	2.0	ND	ND	ND	ND	ND
TR-1	01/17/95	1.5	2,200	5.2	18	23	120
TR-3	01/17/95	2.5	7.3	0.0097	0.098	0.15	0.68
TR-5	01/17/95	3.0	7,300	25	22	86	430

**Table 2: Partial Analytical Results from Shallow Sampling Activities - Water**  
**4660 Hessel Road, Sebastopol**

Sample ID	Date	TPH-g	B	T	E	X
		ug/L				
B-3	03/07/95	690	90	24	2.6	10
B-4	03/07/95	ND	ND	2.8	0.77	2.5
B-5	03/07/95	ND	ND	ND	ND	ND
B-6	03/07/95	ND	ND	ND	ND	ND
B-7	03/07/95	ND	ND	ND	ND	ND
B-8	03/08/95	50	1.1	3.2	0.8	3.1
B-9	03/08/95	ND	ND	ND	ND	ND
B-11	03/07/95	ND	ND	ND	ND	ND
B-12	03/07/95	ND	ND	ND	ND	ND
B-13	03/07/95	ND	1.1	0.72	ND	ND
B-14	03/07/95	ND	ND	ND	ND	0.65
B-15	03/07/95	ND	ND	ND	ND	ND
B-16	03/08/95	ND	ND	ND	ND	ND
B-17	03/08/95	ND	ND	ND	ND	ND
B-18	03/08/95	ND	ND	ND	ND	ND
B-19	03/08/95	ND	ND	ND	ND	ND
B-20	03/08/95	ND	ND	ND	ND	ND
B-21	03/08/95	ND	ND	ND	ND	ND
B-22	03/08/95	ND	ND	ND	ND	ND
B-23	03/08/95	ND	ND	ND	ND	ND
B-24	03/08/95	ND	ND	ND	ND	ND
B-25	03/08/95	ND	ND	ND	ND	ND
B-26	03/08/95	ND	ND	ND	ND	ND
TP2-W	01/17/95	55,000	2,800	21,000	1,500	8,900
HW-1	01/17/95	ND	ND	ND	ND	ND
HW-2	01/17/95	ND	ND	ND	ND	ND
HW-3	01/17/95	ND	ND	ND	ND	ND
HW-4	01/17/95	ND	ND	ND	ND	ND

**Table 3: Soil Sample Analytical Results from Deep Drilling Program - 1997**  
**4660 Hessel Road, Sebastopol**

Sample ID	Date	TPH-g	B	T	E	X	MTBE	TPH-d	TPH-mo
		-----mg/kg-----							
B-101-4.5	02/24/97	150	<0.10	0.15	0.12	0.97	<1.0	NA	NA
B-101-9.5		520	8.5	99	37	250	<20	NA	NA
B-101-13		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-101-14.5		<1.0	<0.005	<0.005	<0.005	0.029	<1.0	NA	NA
B-101-17		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-101-19.5		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-101-24		<1.0	<0.005	0.006	<0.005	0.0083	<1.0	NA	NA
B-102-4.5		180	<0.020	0.37	0.53	2.5	<1.0	NA	NA
B-102-9		<1.0	<0.020	<0.005	<0.005	<0.020	<1.0	NA	NA
B-102-13		<1.0	0.037	0.016	0.022	0.059	<1.0	NA	NA
B-102-19		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-103-4.5		550	<0.40	2.9	4.9	37	<20	NA	NA
B-103-9		920	<0.20	2.1	5.5	38	<10	NA	NA
B-103-13		74	0.54	1.4	1.1	6.7	<1.0	NA	NA
B-103-15		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-103-19		<1.0	<0.020	0.046	0.033	0.16	<1.0	NA	NA
B-103-23		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-104-4.5	02/25/97	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-104-9		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-104-12		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-104-14.5		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-104-19		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-104-24.5		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-105-4.5		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-105-9.5		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-105-14.5		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-105-19.5		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-105-21		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-105-24.5		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-105-25.5		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-106-4.5		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-106-9.5		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-106-15		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-106-19.5		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-106-24.5		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA

**Table 3: Soil Sample Analytical Results from Deep Drilling Program - 1997**  
**4660 Hessel Road, Sebastopol**

Sample ID	Date	TPH-g	B	T	E	X	MTBE	TPH-d	TPH-mo
		-----mg/kg-----							
B-107-4.5	02/26/97	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-107-9.5		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-107-14.5		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-107-17		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-107-19.5		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-107-24		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-107-27		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-107-30		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-107-34.5		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-108-4.5		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-108-9.5		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-108-14		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-108-19.5		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-108-24		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-109-4.5		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-109-9.5		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-109-12.5		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-109-19		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	NA	NA
B-109-24		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	<1.0	<50
B-109-28		<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	<1.0	<50

**Table 4A: Analytical Results from Gas Pipeline Trench Sampling - Gas/BTEX/MTBE**  
**4660 Hessel Road, Sebastopol**

Sample ID	Date	TPH-g	B	T	E	X	MTBE
		-----mg/kg-----					
4660-PH-1-2.5'	11/24/98	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0
4660-PH-2-2.5'	11/24/98	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0
4660-PH-3-1.5'	11/24/98	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0
4660-PH-4-3.5'	11/24/98	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0
4660-PH-5-4'	11/24/98	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0
4660-PH-6-4'	11/24/98	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0
4660-PH-7-3.5'	11/24/98	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0
4660-PH-8-3.5'	11/24/98	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0
4660-PH-9-3.2'	11/24/98	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0
4660-PH-10-3.8'	11/24/98	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0
4660-PH-11-3.5'	11/24/98	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0
4660-PH-12-4'	11/24/98	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0
4660-PH-13-4'	11/24/98	2,400	<0.005	7.7	12	110	<1.0
4660-PH-14-4'	11/24/98	4,000	<0.005	49	45	330	<1.0

**Table 4B: Analytical Results from Gas**  
**Pipeline Trench Sampling - Diesel/Motor Oil**  
**4660 Hessel Road, Sebastopol**

Sample ID	Date	TPH-d	TPH-mo
		-----mg/kg-----	
4660-PH-1-2.5'	11/24/98	1.2	4.4
4660-PH-2-2.5'	11/24/98	<1.0	2.5
4660-PH-3-1.5'	11/24/98	<1.0	NA
4660-PH-4-3.5'	11/24/98	1.7	NA
4660-PH-5-4'	11/24/98	<1.0	NA
4660-PH-6-4'	11/24/98	2.3	NA
4660-PH-7-3.5'	11/24/98	<1.0	NA
4660-PH-8-3.5'	11/24/98	<1.0	NA
4660-PH-9-3.2'	11/24/98	1.1	NA
4660-PH-10-3.8'	11/24/98	<1.0	NA
4660-PH-11-3.5'	11/24/98	<1.0	NA
4660-PH-12-4'	11/24/98	<1.0	NA
4660-PH-13-4'	11/24/98	1,100	NA
4660-PH-14-4'	11/24/98	1,300	NA

**Table 5: Soil Sample Analytical Results from Monitoring Wells**  
**4660 Hessel Road, Sebastopol**

Sample ID	Date	TPH-g	TPH-d	TPH-mo	B	T	E	X	MTBE
		-----mg/kg-----							
MW-1-5	06/29/99	<1.0	<1.0	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0
MW-1-10	06/29/99	<1.0	<1.0	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0
MW-1-15'	06/29/99	<1.0	<1.0	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0
MW-1-20	06/29/99	<1.0	<1.0	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0
MW-3-5	06/29/99	<1.0	<1.0	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0
MW-3-10	06/29/99	<1.0	2.1	<2.0	<0.005	<0.005	0.009	0.034	<1.0
MW-3-15	06/29/99	<1.0	<1.0	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0
MW-5-5	06/29/99	<1.0	<1.0	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0
MW-5-10	06/29/99	<1.0	<1.0	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0
MW-5-15'	06/29/99	<1.0	<1.0	5.0	<0.005	<0.005	<0.005	0.0051	<1.0
MW-8-10'	10/12/00	<1.0	<1.0	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0
MW-8-14'	10/12/00	<1.0	<1.0	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0
MW-10-10.5'	10/11/00	<1.0	<1.0	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0
MW-10-14'	10/11/00	<1.0	3.7	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0
MW-12-9'	10/12/00	<1.0	<1.0	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0
MW-12-12'	10/12/00	<1.0	<1.0	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0
MW-12-14'	10/12/00	<1.0	<1.0	<2.0	<0.005	<0.005	0.023	0.06	<1.0
MW-14-10'	10/11/00	<1.0	<1.0	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0
MW-14-12.5'	10/11/00	<1.0	<1.0	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0
MW-14-13.5'	10/11/00	<1.0	<1.0	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0
MW-16-5'	10/25/00	<1.0	<1.0	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0
MW-16-10'	10/25/00	3.4	<1.0	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0
MW-16-15.5'	10/25/00	5.2	2.7	3.2	<0.005	<0.005	<0.005	<0.005	<1.0

**Table 6: Soil Sample Analytical Results from 1999 Borings**  
**4660 Hessel Road, Sebastopol**

Sample ID	Date	TPH-g	TPH-d	TPH-mo	B	T	E	X	MTBE
		-----mg/kg-----							
B-110-5	06/29/99	<1.0	<1.0	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0
B-110-10	06/29/99	<1.0	<1.0	<2.0	0.0082	<0.005	0.0092	0.027	<1.0
B-110-15'	06/29/99	<1.0	<1.0	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0
B-111-5	06/29/99	<1.0	<1.0	<2.0	<0.005	<0.005	<0.005	0.029	<1.0
B-111-10	06/29/99	<1.0	<1.0	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0
B-112-5	06/30/99	<1.0	<1.0	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0
B-112-10	06/30/99	26	1.6	<2.0	0.58	0.13	0.43	2.0	<1.0
B-112-15	06/30/99	<1.0	<1.0	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0
B-113-5	07/01/99	<1.0	<1.0	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0
B-113-10	07/01/99	450	130	<5.0	<0.30	1.2	2.7	11	<3.0
B-113-13.5'	07/01/99	5.3	2.4	<2.0	<0.030	0.03	<0.030	0.12	<1.0
B-114-5	07/01/99	230	2,200	<5.0	<0.30	3.6	10	74	<3.0
B-114-10'	07/01/99	1,700	450	<10	<0.60	16	14	87	<5.0
B-114-13	07/01/99	1,700	2,200	100	<0.30	8.9	7.2	47	<3.0
B-114-15	07/01/99	3.0	1.2	<2.0	<0.005	<0.005	<0.005	<0.005	<1.0

**Table 7: Soil Analytical Results from 2001 Borings**  
**4660 Hessel Road, Sebastopol, California**

Sample ID	Date	TPH-g	TPH-d	B	T	E	X	MTBE
		-----mg/kg-----						
B-201-4'	08/23/01	930	690	13	33	38	140	<5.0
B-201-8'	08/23/01	1,100	490	13	52	36	130	<5.0
B-203-4'	08/23/01	430	240	1.5	3.6	8.1	22	<5.0
B-203-7.5'	08/23/01	820	180	13	37	32	110	<5.0
B-204-4'	08/23/01	1.1	<10	0.031	0.046	0.066	0.38	<0.025
B-204-8'	08/23/01	NA	<10	NA	NA	NA	NA	NA
B-205-4'	08/23/01	<50	50	<0.50	<0.50	0.76	3.1	<2.5
B-205-8'	08/23/01	8.0	NA	0.075	0.14	0.22	0.78	<0.025
B-206-4'	08/23/01	NA	300	NA	NA	NA	NA	NA
B-206-8'	08/23/01	NA	190	NA	NA	NA	NA	NA
B-207-4'	08/23/01	NA	<10	NA	NA	NA	NA	NA
B-207-8'	08/23/01	NA	<10	NA	NA	NA	NA	NA
B-208-4'	08/23/01	NA	<10	NA	NA	NA	NA	NA
B-208-8'	08/23/01	NA	<10	NA	NA	NA	NA	NA
B-209-4'	08/23/01	NA	<10	NA	NA	NA	NA	NA
B-209-8'	08/23/01	NA	<10	NA	NA	NA	NA	NA
B-210-4'	08/23/01	<1.0	<10	<0.005	0.006	0.047	0.053	<0.025
B-210-8'	08/23/01	<1.0	<10	0.011	<0.005	<0.005	<0.015	<0.025
B-211-4'	08/23/01	NA	920	NA	NA	NA	NA	NA
B-211-8'	08/23/01	NA	27	NA	NA	NA	NA	NA
B-212-4'	08/23/01	<1.0	<10	<0.005	<0.005	<0.005	0.02	<0.025
B-212-8'	08/23/01	<1.0	<10	<0.005	0.008	0.012	0.03	<0.025
B-213-4'	08/23/01	<1.0	NA	<0.005	<0.005	<0.005	<0.015	<0.025
B-213-8'	08/23/01	6.8	NA	0.51	0.62	0.2	0.81	<0.025
B-214-5'	08/24/01	<1.0	NA	<0.005	<0.005	<0.005	<0.015	<0.025
B-214-8'	08/24/01	6.4	50	0.22	0.4	0.22	1.2	<0.025
B-215-6'	08/24/01	NA	120	NA	NA	NA	NA	NA
B-215-9'	08/24/01	NA	700	NA	NA	NA	NA	NA
B-216-6'	08/24/01	1.1	<10	0.21	0.22	0.049	0.2	<0.025
B-216-9'	08/24/01	840	<10	16	43	20	73	<2.5
B-216-11.5'	08/24/01	NA	1,400	NA	NA	NA	NA	NA
B-217-6'	08/24/01	1,110	590	14	45	35	140	<5.0
B-218-6'	08/24/01	<1.0	NA	0.34	<0.005	<0.005	<0.015	<0.025
B-218-9'	08/24/01	10	NA	3.2	2.1	1.4	2.9	<0.50
B-219-9'	08/24/01	NA	920	NA	NA	NA	NA	NA
B-220-7'	08/24/01	NA	<10	NA	NA	NA	NA	NA
B-220-9'	08/24/01	100	NA	1.8	3.9	3.1	11	<2.5
B-221-9'	08/24/01	1,300	310	20	18	23	82	<5.0
B-222-9'	08/24/01	NA	<10	NA	NA	NA	NA	NA
B-223-9'	08/24/01	15	NA	1.9	0.9	4.7	7.4	<0.50
B-223-11.5'	08/24/01	NA	<10	NA	NA	NA	NA	NA
B-224-9'	08/24/01	<1.0	NA	<0.005	<0.005	<0.005	<0.015	<0.025
B-225-11.5'	08/24/01	400	110	11	33	17	70	<5.0
B-226-9'	08/24/01	4.1	NA	0.51	0.35	0.13	0.37	<0.50

**Table 8: Soil Analytical Results from 2001 Excavation  
4660 Hessel Road, Sebastopol, California**

Sample ID	Date	TPH-g	TPH-d	B	T	E	X	MTBE
		----- mg/kg-----						
S-1-(11')	10/09/01	<1.0	<5.0	<0.005	<0.005	<0.005	<0.015	<0.025
S-2-(11')	10/09/01	<1.0	<5.0	<0.005	<0.005	<0.005	<0.015	<0.025
S-3-(11')	10/09/01	<1.0	<5.0	0.012	<0.005	<0.005	<0.015	<0.025
S-4-(11')	10/09/01	7.7	<5.0	0.046	0.18	0.09	0.3	<0.050
S-5-(11')	10/09/01	5.0	<5.0	0.33	0.43	0.11	0.46	<0.025
S-6-(11')	10/09/01	1.6	<5.0	0.21	0.11	0.02	0.11	<0.025
S-7-(11')	10/09/01	1.8	<5.0	0.13	0.077	<0.005	<0.015	<0.025
S-8-11'	10/10/01	16	<5.0	0.15	0.31	0.24	0.63	<0.025
S-9-11'	10/10/01	<1.0	<5.0	0.015	0.018	0.006	0.02	<0.025
S-10-11'	10/10/01	<1.0	<5.0	0.033	0.005	0.043	0.076	<0.025
S-11-11'	10/11/01	100	43	0.38	1.0	0.83	3.1	<1.0
S-12-11'	10/12/01	<1.0	<5.0	0.017	0.014	<0.005	0.015	<0.025
S13-10'	10/16/01	<1.0	<5.0	0.006	<0.005	<0.005	<0.015	<0.025
S14-8'	10/16/01	<1.0	<5.0	0.005	<0.005	0.006	<0.015	<0.025
S15-9'	10/16/01	4.4	<5.0	0.4	0.21	0.12	0.28	<0.025
S16-3'	10/16/01	40	170	<0.005	0.058	0.22	0.58	<0.025
B-1-(13')	10/09/01	<1.0	<5.0	0.063	0.054	<0.005	<0.015	<0.025
B-2-(13')	10/09/01	<1.0	<5.0	0.2	0.12	<0.005	<0.015	<0.025
B-3-(13')	10/09/01	1.0	<5.0	0.092	0.16	0.017	0.087	<0.025
B-4-(13')	10/09/01	<1.0	<5.0	0.094	0.011	0.025	0.036	<0.025
B-5-(13')	10/09/01	1.3	<5.0	0.17	0.25	0.009	0.044	<0.025
B-6-13'	10/10/01	<1.0	<5.0	0.018	0.017	0.007	0.032	<0.025
B-7-13'	10/10/01	<1.0	<5.0	<0.005	<0.005	<0.005	<0.015	<0.025
B-8-13'	10/10/01	6.5	<5.0	1.1	0.93	0.15	0.74	<0.025
B-9-14'	10/11/01	<1.0	<5.0	0.022	0.006	0.005	0.015	<0.025
B-10-14'	10/11/01	2.1	<5.0	0.35	0.3	0.044	0.2	<0.025
B-11-13'	10/12/01	<1.0	<5.0	0.012	0.011	<0.005	0.019	<0.025
B12-16'	10/16/01	<1.0	<5.0	0.006	<0.005	<0.005	<0.015	<0.025
B13-9'	10/16/01	<1.0	<5.0	<0.005	<0.005	<0.005	<0.015	<0.025
EX-1	10/16/01	21	<5.0	0.2	0.27	0.17	0.82	<0.025

**Table 9: Soil Boring Analytical Results - Monitoring Wells - 2004**  
**4660 Hessel Road, Sebastopol**

Sample ID	Date	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes	5-Oxys	n-propylbenzene*	1,3,5-trimethylbenzene*	1,2,4-trimethylbenzene*	n-butylbenzene*	naphthalene*	
			-----mg/kg-----										
MW-18-5'	02/11/04	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002 to <0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
MW-18-10'	02/11/04	<1.0	<0.002	<0.002	<0.002	0.035	<0.002 to <0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
MW-20-5'	02/12/04	550	<0.4	4.9	2.3	146	<0.4 to <10	1.1	3.2	9.5	1.0	1.8	
MW-20-10'	02/12/04	52	<0.1	0.31	0.38	2.18	<0.1 to <1.0	0.2	0.52	1.6	0.14	0.4	

\* Component of gasoline.

All other VOCs are none detect

**Table 10: Domestic Well Analytical Results**  
**4660 Hessel Road, Sebastopol**

ID	Date	TPH-g	TPH-d	TPH-mo	B	T	E	X	EDC	MTBE	Other VOCs
		ug/L									
DW-1	08/09/99	<50	NA	NA	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	NA
	10/20/99	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	NA
	02/28/01	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	NA
	08/22/01	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	NA
	02/26/02	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	NA
	08/27/02	NA	NA	NA	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5
	02/19/03	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	08/21/03	<50	NA	NA	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5
	03/03/04	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	09/02/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	01/04/05	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
DW-HD	08/09/99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10/20/99	<50	<50	120	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	NA
	02/26/02	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	NA
	Well was dry										
	02/19/03	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	NA	<1.0	<1.0
	08/20/03	<50	NA	NA	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5
	03/03/04	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
DW-HD2	08/09/99	<50	NA	NA	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	NA
	10/20/99	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	NA
	02/28/01	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	NA
	08/22/01	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	NA
	02/26/02	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	NA
	08/26/02	NA	NA	NA	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5
	02/19/03	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	08/21/03	<50	NA	NA	<0.3	<0.3	<0.5	<0.5	NA	<0.5	<0.5
	03/02/04	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	09/02/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	01/04/05	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
DW-3	08/09/99	<50	NA	NA	<0.3	<0.3	<0.5	<0.5	2.2	<0.5	NA
	10/20/99	<50	<50	<100	0.45	<0.3	<0.5	<0.5	4.9	<0.5	NA
	01/11/00	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	2.6	<0.5	NA
	01/17/00*	<50	NA	NA	<0.3	<0.3	<0.5	<0.5	2.2	<0.5	NA
	04/18/00	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	1.0	<0.5	NA
	04/18/00	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	1.0	<0.5	NA
	07/26/00	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	2.0	<0.5	NA
	11/27/00	<50	<50	<100	0.31	<0.3	<0.5	<0.5	3.2	<0.5	NA
	02/28/01	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	NA
	08/22/01	No access - Property owner not home								NA	
	11/26/01	No access - Property owner not home								NA	
	02/25/02	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	0.70	<0.5	NA
	08/26/02	NA	NA	NA	<0.3	<0.3	<0.5	<0.5	2.1	<0.5	<0.5
	02/19/03	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	08/21/03	<50	NA	NA	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5
	03/02/04	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	09/02/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	01/04/05	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

\* Confirmation sampling of January 11, 2000 detections.

**Table 10: Domestic Well Analytical Results**  
**4660 Hessel Road, Sebastopol**

ID	Date	TPH-g	TPH-d	TPH-mo	B	T	E	X	EDC	MTBE	Other VOCs
		ug/L									
DW-4	08/09/99	190	NA	NA	<0.3	<0.3	<0.5	3.0	11	<0.5	NA
	10/20/99	500	<50	<100	50	1.3	2.9	23	20	<0.5	NA
	01/11/00	67	<50	<100	<0.3	<0.3	<0.5	2.6	7.1	<0.5	NA
	01/17/00*	83	NA	NA	1.0	<0.3	<0.5	<0.5	7.1	<0.5	NA
	04/18/00	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	NA
	07/20/00	<50	<50	<100	2.3	<0.3	<0.5	<0.5	2.6	<0.5	NA
	11/27/00	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	NA
	02/28/01	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	NA
	08/22/01	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	NA
	02/26/02	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	NA
	08/26/02	NA	NA	NA	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5
	02/19/03	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	08/21/03	<50	NA	NA	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5
	03/02/04	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	09/02/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	01/04/05	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
DW-4615	08/26/02	NA	NA	NA	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5
	02/19/03	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	05/15/03	NA	NA	NA	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5
	08/21/03	<50	NA	NA	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5
	11/21/03	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	03/02/04	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	06/07/04	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	09/02/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	01/04/05	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
DW-MB	02/19/03	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	09/02/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	01/04/05	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

Note: Analysis for TPH-g, TPH-d, and TPH-mo removed from analytical suite with regulatory concurrence in August 20, 2002 letter.

\* Confirmation sampling of January 11, 2000 contaminant hits.

**Table 11: Soil Boring Analytical Results - 2005**  
**4660 Hessel Road, Sebastopol**

Sample ID	Date	TPH-g	Benzene	Toluene	Ethylbenzene	Xylenes	5-Oxys	EDC	isopropylbenzene	n-propylbenzene*	1,3,5-trimethylbenzene*	1,2,4-trimethylbenzene*	sec-butylbenzene	n-butylbenzene	naphthalene*	
		-----mg/kg-----														
B-115-@13.0'	01/24/05	<1.0	0.067	<0.002	0.0049	<0.002	<0.002 to <0.05	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
B-115-@20.5'	01/24/05	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002 to <0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
B-116-@25.5'	01/25/05	<1.0	0.097	<0.002	0.011	<0.002	<0.002 to <0.05	0.0096	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
B-116-@35.5'	01/25/05	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002 to <0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
B-119@20.5'	01/26/05	1.0	0.21	0.0082	0.041	0.063	<0.002 to <0.05	0.002	<0.002	0.0035	0.0086	0.025	<0.002	<0.002	0.015	
B-119@31.0'	01/26/05	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002 to <0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
B-120@16.0'	02/07/05	12	0.0076	<0.002	0.015	<0.002	<0.002 to <0.05	<0.002	<0.002	<0.002	0.0027	<0.002	<0.002	<0.002	<0.002	0.0088
B-120@24'	02/07/05	<1.0	0.0032	<0.002	<0.002	<0.002	<0.002 to <0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
B-120@25.5'	02/07/05	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002 to <0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
B-120@31.5'	02/07/05	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002 to <0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
B-120@36.0'	02/07/05	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002 to <0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
B-121@16.5	02/08/05	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002 to <0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
B-121@21.0	02/08/05	<1.0	0.007	<0.002	<0.002	<0.002	<0.002 to <0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
B-121@26.0	02/08/05	<1.0	<0.002	<0.002	<0.002	<0.002	<0.002 to <0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
B-122@10.5	02/09/05	1,700	7.3	52	19	109	<0.5 to <25	<0.005	1.3	6.7	17	62	0.71	5.0	9.9	
B-122@16.0'	02/09/05	<1.0	0.054	0.08	0.028	0.16	<0.002 to <0.05	0.0052	<0.002	0.0092	0.023	0.082	<0.002	0.0073	0.0096	
B-122@31.0'	02/09/05	<1.0	<0.002	0.004	0.0018	0.0098	<0.002 to <0.05	<0.002	<0.002	<0.002	0.0022	0.0078	<0.002	<0.002	<0.002	<0.002

**Table 12: Groundwater Boring Analytical Results - 2005**  
**4660 Hessel Road, Sebastopol**

Sample ID	Date	TPH-g	TPH-d	TPH-mo	B	T	E	X	MTBE	DIPE	ETBE	TAME	TBA	EDC	n-propyl benzene	1,3,5-trimethylbenzene	n-butylbenzene	1,2,4-trimethylbenzene	naphthalene
		ug/L																	
B-115-W@4.0'	01/24/05	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	
B-115-W@21.5'	01/24/05	1,400	NA	NA	1,200	11	46	29	<10	<10	<10	<10	<250	63	<10	17	<10	12	
B-116-W@3.0'	01/24/05	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	
B-116-W@20.0'	01/25/05	360	NA	NA	2.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	44	10	<1.0	2.0	<1.0	<1.0	
B-116-W@40.0'	01/25/05	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	
B-117-W@3.0'	01/24/05	<50	NA	NA	<1.0	1.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	
B-117-W@20.0'	01/25/05	130	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	4.8	<1.0	<1.0	<1.0	<1.0	
B-117-W@40.0'	01/25/05	110	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	
B-118-W@3.0'	01/24/05	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	
B-118-W@20.0'	01/26/05	230	NA	NA	<1.0	<1.0	2.3	<1.0	<1.0	<1.0	<1.0	<1.0	<25	4.3	<1.0	<1.0	<1.0	<1.0	
B-118-W@37.0'	01/26/05	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	
B-119-W@3.0'	01/26/05	<50	NA	NA	<1.0	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	
B-119-W@20.0'	01/26/05	3,300	NA	NA	1,100	30	170	110	<20	<20	<20	<20	<500	61	<1.0	23	<1.0	40	
B-120-W@5.0'	02/07/05	100	NA	NA	25	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	2.8	<1.0	<1.0	<1.0	<1.0	
B-120-W@39.0'	02/07/05	210	NA	NA	24	1.3	5	1.8	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	1.2	
B-121-W@5.0'	02/08/05	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	
B-121-W@15.0'	02/08/05	350	NA	NA	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	2.4	1.5	<1.0	<1.0	<1.0	
B-121-W@35.0'	02/08/05	<50	NA	NA	1.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	
B-122-W@10.0'	02/09/05	58,000	81,000*	<10,000	6,900	20,000	2,000	11,900	<100	<100	<100	<100	<2,500	<100	290	810	<100	3,000	
B-122-W@35.0'	02/09/05	670	NA	NA	2.8	31	10	61	<1.0	<1.0	<1.0	<1.0	<25	<1.0	3.9	10	2.7	38	
																		6.9	

\* Floating product was present. The sample chromatogram does not exhibit a pattern characteristic of diesel. Higher boiling point constituents of gasoline are clearly present.

**Table 13: Groundwater Flow Direction and Gradient for Shallow Wells**  
**4660 Hessel Road, Sebastopol**

Well #	Date	Top of Casing Elevation (feet > msl)	Depth to Groundwater (feet)	Water Level Elevation (feet > msl)	Groundwater Flow Direction & Gradient (i)
MW-2	07/12/99	140.03	4.32	135.71	N20°E i = 0.02
MW-4		137.78	3.88	133.91	
MW-6		140.00	5.56	134.44	
MW-2	10/20/99	140.03	5.73	134.30	N20°W i = 0.04
MW-4		137.78	5.38	132.40	
MW-6		140.00	5.54	134.46	
MW-2	01/11/00	140.03	3.96	136.07	N10°W i = 0.02
MW-4		137.78	2.69	135.09	
MW-6		140.00	4.09	135.91	
MW-2	04/18/00	140.03	2.12	137.91	N40°W i = 0.04
MW-4		137.78	0.68	137.10	
MW-6		140.00	1.19	138.81	
MW-2	07/20/00	140.03	5.09	134.94	N45°W i = 0.02
MW-4		137.78	2.98	134.80	
MW-6		140.00	3.75	136.25	
MW-2	11/27/00	140.03	5.47	134.56	NNE i = 0.025
MW-4		137.78	3.58	134.20	
MW-6		140.00	4.89	135.11	
MW-8		140.24	5.30	134.94	
MW-10		136.89	5.53	131.36	
MW-12		139.38	5.65	133.73	
MW-14		135.18	4.95	130.23	
MW-16		137.38	4.30	133.08	
MW-2	02/28/01	140.03	2.04	137.99	N20°W i = 0.02
MW-4		137.78	0.57	137.21	
MW-6		140.00	1.16	138.84	
MW-8		140.24	1.64	138.60	
MW-10		136.89	0.85	136.04	
MW-12		139.39	3.75	135.64	
MW-14		135.18	0.21	134.97	
MW-16		137.38	1.72	135.66	
MW-2	05/29/01	140.03	4.78	135.25	N10°W i = 0.03
MW-4		137.78	3.31	134.47	
MW-6		140.00	4.42	135.58	
MW-8		140.24	4.82	135.42	
MW-10		136.89	4.48	132.41	
MW-12		139.38	5.48	133.90	
MW-14		135.18	3.92	131.26	
MW-16		137.38	4.18	133.20	

**Table 13: Groundwater Flow Direction and Gradient for Shallow Wells**  
**4660 Hessel Road, Sebastopol**

Well #	Date	Top of Casing Elevation (feet > msl)	Depth to Groundwater (feet)	Water Level Elevation (feet > msl)	Groundwater Flow Direction & Gradient (i)
MW-2	08/22/01	140.03	7.0	133.03	N10°W i = 0.02
MW-4		137.78	5.50	132.28	
MW-6		140.00	6.88	133.12	
MW-8		140.24	7.39	132.85	
MW-10		136.89	7.30	129.59	
MW-12		139.38	6.95	132.43	
MW-14		135.18	6.30	128.88	
MW-16		137.38	6.46	130.92	
MW-2	11/26/01	140.03	3.45	136.58	N10°W i = 0.02
MW-4		137.78	2.45	135.33	
MW-6		140.00	3.70	136.30	
MW-8		140.24	3.80	136.44	
MW-10		136.89	3.76	133.13	
MW-12		139.38	5.22	134.16	
MW-14		135.18	3.32	131.86	
MW-16		137.38	3.10	134.28	
MW-2	02/25/02	140.03	2.31	137.72	N20°W i = 0.03
MW-4		137.78	0.39	137.39	
MW-6		140.00	1.36	138.64	
MW-8		140.24	1.85	138.39	
MW-10		136.89	0.95	135.94	
MW-12		139.38	3.72	135.66	
MW-14		135.18	0.30	134.88	
MW-16		137.38	2.01	135.37	
MW-2	05/29/02	140.03	4.12	135.91	Northerly i = 0.02
MW-4		137.78	2.0	135.78	
MW-6		140.00	3.36	136.64	
MW-8		140.24	3.86	136.38	
MW-10		136.89	3.23	133.66	
MW-12		139.38	5.26	134.12	
MW-14		135.18	2.66	132.52	
MW-16		137.38	3.31	134.07	
MW-2	08/26/02	140.03	6.05	133.98	Northerly i = 0.01
MW-4		137.78	4.46	133.32	
MW-6		140.00	6.51	133.49	
MW-8		140.24	7.38	132.86	
MW-10		136.89	6.34	130.55	
MW-12		139.38	6.0	133.38	
MW-14		135.18	5.47	129.71	
MW-16		137.38	5.49	131.89	

**Table 13: Groundwater Flow Direction and Gradient for Shallow Wells**  
**4660 Hessel Road, Sebastopol**

Well #	Date	Top of Casing Elevation (feet > msl)	Depth to Groundwater (feet)	Water Level Elevation (feet > msl)	Groundwater Flow Direction & Gradient (i)
MW-2	11/19/02	140.03	5.35	134.68	N to NE i = 0.02
MW-4		137.78	3.78	134.00	
MW-6		140.00	5.75	134.25	
MW-8		140.24	6.48	133.76	
MW-10		136.89	5.92	130.97	
MW-12		139.38	5.50	133.88	
MW-14		135.18	5.46	129.72	
MW-16		137.38	4.77	132.61	
MW-2	02/18/03	140.03	2.03	138.00	Apparent N-NE Gradient not calculated
MW-4		137.78	0.40	137.38	
MW-6		140.00	1.31	138.69	
MW-8		140.24	1.78	138.46	
MW-10		136.89	0.80	136.09	
MW-12		139.38	3.65	135.73	
MW-14		135.18	0.10	135.08	
MW-16		137.38	1.79	135.59	
MW-2	05/14/03	140.03	2.82	137.21	Northerly i = 0.02
MW-4		137.78	0.98	136.80	
MW-6		140.00	2.04	137.96	
MW-8		140.24	2.53	137.71	
MW-10		136.89	1.74	135.15	
MW-12		139.38	4.31	135.07	
MW-14		135.18	1.02	134.16	
MW-16		137.38	2.45	134.93	
MW-2	08/20/03	140.03	5.41	134.62	Northeasterly i = 0.01
MW-4		137.78	4.05	133.73	
MW-6		140.00	5.98	134.02	
MW-8		140.24	6.77	133.47	
MW-10		136.89	5.77	131.12	
MW-12		139.38	5.82	133.56	
MW-14		135.18	4.72	130.46	
MW-16		137.38	5.33	132.05	
MW-2	11/20/03	140.03	5.33	134.70	Northeasterly i = 0.02
MW-4		137.78	3.47	134.31	
MW-6		140.00	5.45	134.55	
MW-8		140.24	6.13	134.11	
MW-10		136.89	5.90	130.99	
MW-12		139.38	5.58	133.80	
MW-14		135.18	5.25	129.93	
MW-16		137.38	4.71	132.67	

**Table 13: Groundwater Flow Direction and Gradient for Shallow Wells**  
**4660 Hessel Road, Sebastopol**

Well #	Date	Top of Casing Elevation (feet > msl)	Depth to Groundwater (feet)	Water Level Elevation (feet > msl)	Groundwater Flow Direction & Gradient (i)	
MW-2	03/02/04*	135.97	2.56	133.41	Northerly i = 0.03	
MW-4		133.74	0.10	133.64		
MW-6		135.97	1.60	134.37		
MW-8		136.20	1.57	134.63		
MW-10		132.85	1.0	131.85		
MW-12		135.32	3.79	131.53		
MW-14		131.15	Artesian conditions			
MW-16		133.33	1.78	131.55		
MW-18		137.95	1.0	136.95		
MW-20		136.93	1.59	135.34		
Stand Pipe		135.11	5.20**	129.91		
Bridge		132.97	7.72	125.25		
MW-2	06/07/04	135.97	4.14	131.83	Northerly i = 0.03	
MW-4		133.74	2.88	130.86		
MW-6		135.97	4.39	131.58		
MW-8		136.20	5.05	131.15		
MW-10		132.85	4.34	128.51		
MW-12		135.32	5.43	129.89		
MW-14		131.15	3.58	127.57		
MW-16		133.33	4.12	129.21		
MW-18		137.95	4.24	133.71		
MW-20		136.93	4.38	132.55		
Stand Pipe		135.11	6.14	128.97		
Bridge		132.97	7.84	125.13		
MW-2	09/02/04	135.97	2.87	133.10	N-NE i = 0.03	
MW-4		133.74	3.97	129.77		
MW-6		135.97	5.61	130.36		
MW-8		136.20	6.32	129.88		
MW-10		132.85	5.99	126.86		
MW-12		135.32	5.35	129.97		
MW-14		131.15	4.86	126.29		
MW-16		133.33	5.58	127.75		
MW-18		137.95	4.47	133.48		
MW-20		136.93	4.33	132.60		
Stand Pipe		135.11	6.62	128.49		
Bridge		132.97	7.88	125.09		

\* Previously existing wells were re-surveyed and MW-18 and MW-20 were surveyed to msl on February 26 and March 4, 2004.

\*\* Measurement collected on March 12, 2004.

**Table 13: Groundwater Flow Direction and Gradient for Shallow Wells**  
**4660 Hessel Road, Sebastopol**

Well #	Date	Top of Casing Elevation (feet > msl)	Depth to Groundwater (feet)	Water Level Elevation (feet > msl)	Groundwater Flow Direction & Gradient (i)
MW-2	01/04/05	135.97	1.33	134.64	N-NW i = 0.05
MW-4		133.74		Artesian conditions	
MW-6		135.97	0.56	135.41	
MW-8		136.20	1.15	135.05	
MW-10		132.85	0.39	132.46	
MW-12		135.32	4.11	131.21	
MW-14		131.15		Artesian conditions	
MW-16		133.33	1.21	132.12	
MW-18		137.95	0.47	137.48	
MW-20		136.93	0.76	136.17	
Stand Pipe		135.11		NM	
Bridge		132.97		NM	

Notes: Groundwater flow direction rounded to nearest 5 degrees.

**Table 14: Groundwater Flow Direction and Gradient for Deep Wells**  
**4660 Hessel Road, Sebastopol**

Well #	Date	Top of Casing Elevation (feet > msl)	Depth to Groundwater (feet)	Water Level Elevation (feet > msl)	Groundwater Flow Direction & Gradient (i)	
MW-1	07/12/99	139.76	2.26	137.50	N85°E i = 0.02	
MW-3		137.79	2.41	135.38		
MW-5		139.40	5.20	134.20		
MW-1	10/20/99	139.76	3.13	136.63	N75°E i = 0.03	
MW-3		137.79	4.26	133.53		
MW-5		139.40	7.10	132.30		
MW-1	01/11/00	139.76	2.0	137.76	N15°E i = 0.02	
MW-3		137.79	1.97	135.82		
MW-5		139.40	2.56	136.84		
MW-1	04/18/00	139.76	0.41	139.35	Not calculated	
MW-3		137.79	Artesian conditions			
MW-5		139.40	0.57	138.83		
MW-1	07/20/00	139.76	2.59	137.17	N5°E i = 0.01	
MW-3		137.79	1.63	136.16		
MW-5		139.40	2.72	136.68		
MW-1	11/27/00	139.75	3.49	136.26	N35°E i = 0.025	
MW-3		137.79	2.29	135.50		
MW-5		139.40	3.62	135.78		
MW-7D		140.14	4.32	135.82		
MW-9D		136.92	7.13	129.29		
MW-11D		139.41	2.74	136.67		
MW-13D		135.30	6.84	128.46		
MW-15D		137.22	5.78	131.44		
MW-1	02/28/01	139.75	0.56	139.19	N5°E i = 0.02	
MW-3		137.79	Artesian conditions			
MW-5		139.40	0.17	139.23		
MW-7D		140.14	0.79	139.35		
MW-9D		136.92	2.91	134.01		
MW-11D		139.41	0.04	139.37		
MW-13D		135.30	0.59	134.71		
MW-15D		137.22	2.26	134.96		
MW-1	05/29/01	139.75	2.65	137.10	North i = 0.05	
MW-3		137.79	1.70	136.09		
MW-5		139.40	2.86	136.54		
MW-7D		140.14	3.53	136.61		
MW-9D		136.92	4.80	132.12		
MW-11D		139.41	1.96	137.45		
MW-13D		135.30	5.87	129.43		
MW-15D		137.22	4.99	132.23		

**Table 14: Groundwater Flow Direction and Gradient for Deep Wells**  
**4660 Hessel Road, Sebastopol**

Well #	Date	Top of Casing Elevation (feet > msl)	Depth to Groundwater (feet)	Water Level Elevation (feet > msl)	Groundwater Flow Direction & Gradient (i)	
MW-1	08/22/01	139.75	4.75	135.00	N5°E i = 0.04	
MW-3		137.79	3.82	133.97		
MW-5		139.40	5.07	134.33		
MW-7D		140.14	5.73	134.41		
MW-9D		136.92	6.78	130.14		
MW-11D		139.41	4.08	135.33		
MW-13D		135.30	5.99	129.31		
MW-15D		137.22	6.88	130.34		
MW-1	11/26/01	139.75	2.80	136.95	North i = 0.03	
MW-3		137.79	1.92	135.87		
MW-5		139.40	3.40	136.00		
MW-7D		140.14	4.10	136.04		
MW-9D		136.92	3.71	133.21		
MW-11D		139.41	2.13	137.28		
MW-13D		135.30	3.49	131.81		
MW-15D		137.22	4.30	132.92		
MW-1	02/25/02	139.75	0.68	139.07	N35°E i = 0.03	
MW-3		137.79	Artesian conditions			
MW-5		139.40	0.60	138.80		
MW-7D		140.14	1.16	138.98		
MW-9D		136.92	1.55	135.37		
MW-11D		139.41	0.12	139.29		
MW-13D		135.30	0.57	134.73		
MW-15D		137.22	2.50	134.72		
MW-1	05/29/02	139.75	1.91	137.84	N to NE i = 0.02	
MW-3		137.79	1.20	136.59		
MW-5		139.40	2.36	137.04		
MW-7D		140.14	3.0	137.14		
MW-9D		136.92	3.14	133.78		
MW-11D		139.41	1.23	138.18		
MW-13D		135.30	2.65	132.65		
MW-15D		137.22	3.93	133.29		
MW-1	08/26/02	139.75	4.25	135.50	N to NE i = 0.02	
MW-3		137.79	3.45	134.34		
MW-5		139.40	4.96	134.44		
MW-7D		140.14	5.59	134.55		
MW-9D		136.92	6.41	130.51		
MW-11D		139.41	3.60	135.81		
MW-13D		135.30	5.10	130.20		
MW-15D		137.22	6.05	131.17		

**Table 14: Groundwater Flow Direction and Gradient for Deep Wells**  
**4660 Hessel Road, Sebastopol**

Well #	Date	Top of Casing Elevation (feet > msl)	Depth to Groundwater (feet)	Water Level Elevation (feet > msl)	Groundwater Flow Direction & Gradient (i)
MW-1	11/19/02	139.75	4.08	135.67	N to NE i = 0.02
MW-3		137.79	2.93	134.86	
MW-5		139.40	4.36	135.04	
MW-7D		140.14	4.99	135.15	
MW-9D		136.92	4.81	132.11	
MW-11D		139.41	2.97	136.44	
MW-13D		135.30	4.96	130.34	
MW-15D		137.22	5.57	131.65	
MW-1	02/18/03	139.75	1.03	138.72	Apparent N-NE Gradient not calculated
MW-3		137.79		Artesian conditions	
MW-5		139.40	0.07	139.33	
MW-7D		140.14	1.24	138.90	
MW-9D		136.92	2.92	134.00	
MW-11D		139.41	0.20	139.21	
MW-13D		135.30	0.50	134.80	
MW-15D		137.22	2.27	134.95	
MW-1	05/14/03	139.75	1.19	138.56	N-NE i = 0.02
MW-3		137.79	0.15	137.64	
MW-5		139.40	1.08	138.32	
MW-7D		140.14	1.66	138.48	
MW-9D		136.92	0.50	136.42	
MW-11D		139.41	0.38	139.03	
MW-13D		135.30	1.15	134.15	
MW-15D		137.22	2.86	134.36	
MW-1	08/20/03	139.75	3.90	135.85	N-NE i = 0.02
MW-3		137.79	2.99	134.80	
MW-5		139.40	4.42	134.98	
MW-7D		140.14	5.03	135.11	
MW-9D		136.92	5.93	130.99	
MW-11D		139.41	3.14	136.27	
MW-13D		135.30	4.60	130.70	
MW-15D		137.22	5.67	131.55	
MW-1	11/20/03	139.75	3.93	135.82	N-NE i = 0.02
MW-3		137.79	2.77	135.02	
MW-5		139.40	4.15	135.25	
MW-7D		140.14	4.78	135.36	
MW-9D		136.92	6.98	129.94	
MW-11D		139.41	3.13	136.28	
MW-13D		135.30	4.81	130.49	
MW-15D		137.22	5.36	131.86	

**Table 14: Groundwater Flow Direction and Gradient for Deep Wells**  
**4660 Hessel Road, Sebastopol**

Well #	Date	Top of Casing Elevation (feet > msl)	Depth to Groundwater (feet)	Water Level Elevation (feet > msl)	Groundwater Flow Direction & Gradient (i)	
MW-1	3/2/2004*	135.69	1.00	134.69	Northerly i = 0.04	
MW-3		133.75	1.65	132.10		
MW-5		135.36	0.30	135.06		
MW-7D		136.08	1.40	134.68		
MW-9D		132.88	4.40	128.48		
MW-11D		135.35	1.05	134.30		
MW-13D		131.28	Artesian conditions			
MW-15D		133.19	2.69	130.50		
MW-17D		137.84	1.60	136.24		
MW-19D		137.05	1.10	135.95		
MW-1	06/07/04	135.69	2.79	132.90	N-NE i = 0.04	
MW-3		133.75	2.01	131.74		
MW-5		135.36	3.24	132.12		
MW-7D		136.08	3.85	132.23		
MW-9D		132.88	7.67	125.21		
MW-11D		135.35	2.18	133.17		
MW-13D		131.28	3.42	127.86		
MW-15D		133.19	4.55	128.64		
MW-17D		137.84	4.26	133.58		
MW-19D		137.05	3.73	133.32		
MW-1	09/02/04	135.69	4.24	131.45	Northerly i = 0.03	
MW-3		133.75	2.98	130.77		
MW-5		135.36	4.20	131.16		
MW-7D		136.08	4.78	131.30		
MW-9D		132.88	11.58	121.30		
MW-11D		135.35	3.49	131.86		
MW-13D		131.28	5.21	126.07		
MW-15D		133.19	6.01	127.18		
MW-17D		137.84	4.16	133.68		
MW-19D		137.05	4.07	132.98		
MW-1	01/04/05	135.69	0.76	134.93	Northerly i = 0.03	
MW-3		133.75	Artesian conditions			
MW-5		135.36	0.11	135.25		
MW-7D		136.08	1.00	135.08		
MW-9D		132.88	3.93	128.95		
MW-11D		135.35	0.31	135.04		
MW-13D		131.28	0.52	130.76		
MW-15D		133.19	1.18	132.01		
MW-17D		137.84	1.57	136.27		
MW-19D		137.05	1.34	135.71		

\* Previously existing wells were re-surveyed and new wells were surveyed to msl on February 26 and March 4, 2004

**Table 15: Monitoring Well Analytical Results  
4660 Hessel Road, Sebastopol**

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**4660 Hessel Road, Sebastopol**

ID	Date	TPH-g	TPH-d	TPH-mo	B	T	E	X	EDC	MTBE	DIPE	ETBE	TAME	TBA	n-butylbenzene	sec-butylbenzene	Methyl ethyl ketone	Styrene	isopropylbenzene	p-isopropyltoluene	naphthalene	n-propylbenzene	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Chloroform	
		ug/L																								
MW-4	07/12/99	19,000	3,000	<100	4,000	680	990	3,200	57	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10/20/99	38,000	1,200	<100	6,100	330	1,300	3,100	<10	<10	<10	<10	<10	<200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	01/11/00	30,000	1,200	<100	4,100	350	550	1,600	<0.5	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	04/18/00	30,000	3300	ND	6,600	750	1,000	2,700	80	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	07/20/00	19,000	3,200	<200	4,700	890	920	2,200	62	<2.0	<2.0	<2.0	<2.0	<50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/27/00	24,000	2,000	<100	6,700	330	1,200	2,400	67	<10	<10	<10	<10	<200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	02/28/01	29,000	3,900	330	4,200	410	830	2,800	<50	<50	<50	<50	<50	<500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	05/29/01	32,000	1,400	<110	4,200	490	920	2,700	42	<5.0	<5.0	<5.0	<5.0	<100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	08/24/01	14,000	530 <sup>1</sup>	<110	2,500	150	540	640	21	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/26/01	10,000	410 <sup>1</sup>	<100	2,100	70	90	800	16	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	02/26/02	23,000	1,100	<100	3,200	<150	440	860	<250	<250	<250	<250	<250	<5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	05/30/02	7,400	1,000	<200	2,400	40	390	290	<50	<50	<50	<50	<50	<1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	08/27/02	10,000	NA	NA	3,500	6.6	540	10	23	<0.5	NA	NA	NA	NA	8.8	4.3	<1.0	<0.5	21	2.4	11	51	100	1.2	<0.5	
	11/19/02	9,100	NA	NA	3,300	9.2	380	26	23	<0.5	NA	NA	NA	NA	6.3	2.8	<1.0	<0.5	18	1.4	13	45	46	2.1	<0.5	
	02/19/03	3,100	NA	NA	910	<25	120	<25	<25	<25	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	29	<1.0	<1.0	<1.0	
	05/15/03	3,300	NA	NA	800	<15	110	<25	<25	<25	NA	NA	NA	NA	<25	<25	<50	<25	<25	<25	<25	36	<25	<25	<25	
	08/21/03	1,400	NA	NA	35	<3.0	80	<5.0	9.1	<5.0	NA	NA	NA	NA	<5.0	<5.0	<10	<5.0	9.7	<5.0	<5.0	27	<5.0	<5.0	<5.0	
	11/20/03	1,300	NA	NA	85	2.3	36	19	11	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	03/03/04	670	NA	NA	8.1	<1.0	7.6	<1.0	5.7	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	4.4	<1.0	<1.0	11	<1.0	<1.0	<1.0	<1.0
	06/08/04	460	NA	NA	1.6	<1.0	1.4	<1.0	2.4	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	2.5	<1.0	<1.0	5.9	<1.0	<1.0	<1.0	<1.0
	09/02/04	350	NA	NA	1.3	<1.0	<1.0	<1.0	2.3	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	01/05/05	540	NA	NA	5.1	<1.0	<1.0	<1.0	3.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.7	<1.0	<1.0

<sup>1</sup> According to the laboratory report, results in the diesel organics range are primarily due to overlap from a gasoline range product

**Table 15: Monitoring Well Analytical Results**  
**4660 Hessel Road, Sebastopol**

ID	Date	TPH-g	TPH-d	TPH-mo	B	T	E	X	EDC	MTBE	DIPE	ETBE	TAME	TBA	n-butylbenzene	sec-butylbenzene	Methyl ethyl ketone	Styrene	isopropylbenzene	p-isopropyltoluene	naphthalene	n-propylbenzene	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Chloroform		
		ug/L																									
MW-5	07/12/99	1,200	ND <sup>2</sup>	<100	13	0.89	19	7.3	0.92	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	10/20/99	760	58	<100	0.86	0.34	34	2.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	01/11/00	<50	<50	<100	1.1	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	04/18/00	ND	ND <sup>1</sup>	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	07/20/00	<50	170 <sup>1</sup>	<200	0.84	0.54	1.1	2.8	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/27/00	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	02/28/01	<50	54	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	05/29/01	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	08/22/01	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/26/01	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	02/25/02	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	05/29/02	<50	<50	<200	<0.5	0.59	<0.5	<1.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	08/26/02	<50	NA	NA	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	11/19/02	<50	NA	NA	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	02/19/03	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	05/14/03	<50	NA	NA	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	08/20/03	<50	NA	NA	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	11/20/03	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	03/03/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	06/07/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	09/02/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	01/04/05	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	

<sup>1</sup> According to the laboratory report, results in the diesel organics range are primarily due to overlap from a gasoline range product

<sup>2</sup> Also ND for TPH-k.

**Table 15: Monitoring Well Analytical Results**  
**4660 Hessel Road, Sebastopol**

ID	Date	TPH-g	TPH-d	TPH-mo	B	T	E	X	EDC	MTBE	DIPE	ETBE	TAME	TBA	n-butylbenzene	sec-butylbenzene	Methyl ethyl ketone	Styrene	isopropylbenzene	p-isopropyltoluene	naphthalene	n-propylbenzene	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Chloroform		
		ug/L																									
MW-6	07/12/99	<50	<50	<100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	10/20/99	<50	<50	<100	0.38	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	01/11/00	650	150	<100	6.7	<0.3	8.3	1.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	04/18/00	240	200	ND	4.7	1.1	3.6	3.2	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	07/20/00	230	170 <sup>1</sup>	ND	1.4	<0.5	1.8	1.4	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/27/00	220	59 <sup>1</sup>	<100	1.6	3.1	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	02/28/01	240	120	<100	1.0	<0.3	4.9	2.9	<0.5	1.4	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	05/29/01	590	120 <sup>1</sup>	<100	36	<0.3	21	1.6	1.6	<0.5	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	08/22/01	170	110 <sup>1</sup>	<100	9.0	<0.3	6.0	<0.5	<0.5	0.99	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/26/01	390	<50	<100	3.5	<0.3	5.6	<0.5	1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5	
	02/25/02	280	95 <sup>1</sup>	<100	1.3	<0.3	7.5	2.6	<0.5	0.64	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	05/29/02	110	55 <sup>1</sup>	<200	1.5	0.88	3.3	1.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	08/26/02	910	NA	NA	8.6	<0.3	29	3.2	3.5	<0.5	NA	NA	NA	NA	<0.5	2.2	<1.0	<0.5	4.8	0.92	3.7	8.3	2.8	2.5	<0.5	<0.5	
	11/19/02	950	NA	NA	8.8	0.38	19	1.6	2.6	<0.5	NA	NA	NA	NA	<0.5	1.7	1.3	<0.5	4.1	<0.5	4.5	5.3	1.2	0.62	<0.5	<0.5	
	02/19/03	780	NA	NA	8.6	<1.0	5.7	2.5	<1.0	<1.0	NA	NA	NA	NA	<1.0	1.0	<1.0	<1.0	3.5	<1.0	8.8	2.4	3.5	2.2	<1.0	<1.0	
	05/15/03	210	NA	NA	1.1	<0.3	4.4	1.5	<0.5	<0.5	NA	NA	NA	NA	0.9	2.0	2.1	<0.5	0.96	<0.5	2.4	1.7	2.5	1.7	<0.5	<0.5	
	08/21/03	640	NA	NA	5.0	<0.3	17	3.4	<0.5	<0.5	NA	NA	NA	NA	1.2	0.81	<1.0	<0.5	2.4	<0.5	4.9	5.0	3.6	3.3	<0.5	<0.5	
	11/20/03	1,300	NA	NA	13	<1.0	27	3.9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	11	2.1	<1.0	<1.0	9.7	<1.0	22	<1.0	5.1	7.8	<1.0	<1.0
	03/03/04	170	NA	NA	<1.0	<1.0	3.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	1.2	1.0	<1.0	<1.0	
	06/08/04	120	NA	NA	<1.0	<1.0	2.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.7	1.0	<1.0	<1.0	<1.0	
	09/02/04	150	NA	NA	<1.0	<1.0	4.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	01/04/05	260	NA	NA	<1.0	<1.0	2.5	1.0	<1.0	1.2	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.5	<1.0	<1.0	<1.0	<1.0	

<sup>1</sup> According to the laboratory report, results in the diesel organics range are primarily due to overlap from a gasoline range product

<sup>2</sup> Also ND for TPH-k.

**Table 15: Monitoring Well Analytical Results  
4660 Hessel Road, Sebastopol**

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4660 Hessel Road, Sebastopol**

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**4660 Hessel Road, Sebastopol**

ID	Date	TPH-g	TPH-d	TPH-mo	B	T	E	X	EDC	MTBE	DIPE	ETBE	TAME	TBA	n-butylbenzene	sec-butylbenzene	Methyl ethyl ketone	Styrene	isopropylbenzene	p-isopropyltoluene	naphthalene	n-propylbenzene	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Chloroform	
		ug/L																								
MW-9D	11/27/00	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	02/28/01	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	05/29/01	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	08/22/01	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/26/01	<50	<50	<100	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	02/26/02	<50	<50	<100	<0.3	0.32	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	05/29/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	08/27/02	<50	NA	NA	0.44	<0.3	<0.5	0.99	<0.5	<0.5	NA	NA	NA	NA	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	11/20/02	<50	NA	NA	3.0	<0.3	0.71	0.87	<0.5	<0.5	NA	NA	NA	NA	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.54	<0.5	<0.5
	02/19/03	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	05/15/03	<50	NA	NA	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.54	<0.5	<0.5
	08/15/03	<50	NA	NA	0.42	1.1	0.55	2.2	<0.5	<0.5	NA	NA	NA	NA	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	08/21/03	NA	NA	NA	NA	NA	NA	NA	<1.0	NA	NA	NA	NA	NA	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	11/21/03	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	03/02/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	06/07/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	09/02/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	01/04/05	74	NA	NA	<1.0	<1.0	<1.0	3.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.2	<1.0	<1.0

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4660 Hessel Road, Sebastopol**

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ID	Date	TPH-g	TPH-d	TPH-mo	B	T	E	X	EDC	MTBE	DIPE	ETBE	TAME	TBA	n-butylbenzene	sec-butylbenzene	Methyl ethyl ketone	Styrene	isopropylbenzene	p-isopropyltoluene	naphthalene	n-propylbenzene	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Chloroform
		ug/L																							
MW-12	11/27/00	67,000	4,900	<100	2,100	14,000	1,700	8,800	<50	<50	<50	<50	<50	<1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	02/28/01	33,000	1,800	160	1,500	5,700	630	3,100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	05/29/01	64,000	2,900	<100	2,200	7,200	1,000	5,300	19	<5.0	<5.0	<5.0	<5.0	<100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	08/24/01	59,000	2,500	<100	1,700	8,200	1,500	7,400	<50	<50	<50	<50	<50	<100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/27/01	40,000	800	<100	640	5,300	820	3,600	2.8	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	02/26/02	23,000	1,400	<100	1,600	760	660	1,300	<250	<250	<250	<250	<250	<5,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	05/30/02	16,000	2,000	<200	2,300	280	790	1,600	<50	<50	<50	<50	<50	<1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	08/27/02	28,000	NA	NA	2,300	280	2,200	4,000	12	<5.0	NA	NA	NA	NA	<5.0	18	12	7.0	74	16	730	250	2,600	520	<5.0
	11/20/02	28,000	NA	NA	1,000	200	940	1,700	<0.5	<0.5	NA	NA	NA	NA	20	7.9	<1.0	<0.5	45	4.1	420	88	<0.5	260	<0.5
	02/19/03	14,000	NA	NA	1,200	200	680	920	<25	<25	NA	NA	NA	NA	<25	<25	<25	<25	29	<25	300	94	650	210	<25
	05/15/03	16,000	NA	NA	2,200	250	1,100	900	<50	<50	NA	NA	NA	NA	<50	<50	<100	<50	78	<50	500	140	950	300	<50
	08/21/03	18,000	NA	NA	840	340	790	1,200	<250	<250	NA	NA	NA	NA	<250	<250	<500	<250	<250	<250	300	<250	980	270	<250
	11/21/03	16,000	NA	NA	790	380	810	706	<20	<20	<20	<20	<20	<500	130	<20	<20	<20	37	<20	350	<20	1,100	290	<20
	03/04/04	7,800	NA	NA	710	180	490	442	<10	<10	<10	<10	<10	<250	<10	<10	<10	<10	26	<10	180	89	700	180	<10
	06/08/04	7,600	NA	NA	960	820	1,200	1,940	<10	<25	<25	<25	<25	<500	<25	<25	<25	<25	60	<25	480	210	1,600	440	<25
	09/02/04	11,000	NA	NA	460	720	670	1,185	<25	<25	<25	<25	<25	<500	<25	<25	<25	<25	36	<25	270	140	1,100	300	<25
	01/05/05	5,500	NA	NA	100	41	130	112	<2.0	<2.0	<2.0	<2.0	<2.0	<50	<2.0	3.0	<2.0	<2.0	9.2	3.8	62	36	240	65	<2.0

<sup>1</sup> According to the laboratory report, results in the diesel organics range are primarily due to overlap from a gasoline range product

**Table 15: Monitoring Well Analytical Results**  
**4660 Hessel Road, Sebastopol**

ID	Date	TPH-g	TPH-d	TPH-mo	B	T	E	X	EDC	MTBE	DIPE	ETBE	TAME	TBA	n-butylbenzene	sec-butylbenzene	Methyl ethyl ketone	Styrene	isopropylbenzene	p-isopropyltoluene	naphthalene	n-propylbenzene	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Chloroform	
		ug/L																								
MW-13D	11/27/00	150	<50	<100	36	0.55	1.1	1.5	3.7	<0.5	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	02/28/01	360	65	<100	110	<0.3	<0.5	<0.5	10	<0.5	<0.5	<0.5	<0.5	<0.5	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	05/29/01	390	<50	<100	100	<0.3	<0.5	<0.5	11	<0.5	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	08/22/01	330 <sup>3</sup>	<50	<100	79	<0.3	<0.5	<0.5	15	<0.5	<0.5	<0.5	<0.5	<0.5	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/26/01	300	<50	<100	67	<0.3	<0.5	0.5	17	<0.5	<0.5	<0.5	<0.5	<0.5	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	02/25/02	190	<50	<100	45	1.6	0.58	<0.5	16	<0.5	<0.5	<10	<0.5	<0.5	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	05/29/02	72	<50	<200	34	<0.5	<0.5	<1.5	15	<1.0	<1.0	<1.0	<1.0	<1.0	<25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	08/26/02	130	NA	NA	20	<0.3	<0.5	<0.5	19	<0.5	NA	NA	NA	NA	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	11/19/02	130	NA	NA	8.8	<0.3	<0.5	<0.5	22	<0.5	NA	NA	NA	NA	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	02/19/03	73	NA	NA	5.7	<1.0	<1.0	<1.0	15	<1.0	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	05/15/03	<50	NA	NA	1.4	<0.3	<0.5	<0.5	19	<0.5	NA	NA	NA	NA	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	08/21/03	53	NA	NA	0.5	0.77	<0.5	1.4	11	<0.5	NA	NA	NA	NA	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	11/20/03	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	16	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	03/02/04	51	NA	NA	<1.0	<1.0	<1.0	<1.0	13	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	06/08/04	100	NA	NA	<1.0	<1.0	<1.0	<1.0	14	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	09/02/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	14	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	01/04/05	65	NA	NA	<1.0	<1.0	<1.0	<1.0	2.1	9.8	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.9	<1.0	<1.0

<sup>3</sup> According to laboratory report, gasoline results are primarily due to the presence of benzene.

**Table 15: Monitoring Well Analytical Results  
4660 Hessel Road, Sebastopol**

**Table 15: Monitoring Well Analytical Results**  
**4660 Hessel Road, Sebastopol**

ID	Date	TPH-g	TPH-d	TPH-mo	B	T	E	X	EDC	MTBE	DIPE	ETBE	TAME	TBA	n-butylbenzene	sec-butylbenzene	Methyl ethyl ketone	Styrene	isopropylbenzene	p-isopropyltoluene	naphthalene	n-propylbenzene	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Chloroform
		ug/L																							
MW-15D	11/27/00	32,000	2,600	<100	5,900	490	1,200	3,100	91	<25	<25	<25	<25	<500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	02/28/01	39,000	2,900	<100	7,500	510	1,500	3,500	96	<0.5	<0.5	<0.5	<0.5	650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	05/29/01	39,000	840 <sup>1</sup>	<100	6,000	360	940	2,100	80	<5.0	<5.0	<5.0	<5.0	330	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	08/24/01	45,000	1,700	<100	6,900	410	1,300	2,900	99	<50	<50	<50	<50	<1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/26/01	42,000	1700	<100	7,900	520	1,600	3,600	120	<50	<50	<50	<50	<1,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	02/26/02	35,000	1,800	<100	4,800	<300	710	1,300	<500	<500	<500	<500	<500	<10,00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	05/30/02	14,000	1,300	<200	4,600	220	680	1,300	2.1	<1.0	<1.0	<1.0	<1.0	<25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	08/27/02	32,000	NA	NA	4,300	310	840	1,300	81	<50	NA	NA	NA	NA	<5.0	9.4	<5.0	37	8.8	320	110	550	240	<5.0	
	11/20/02	32,000	NA	NA	4,100	260	660	1,900	67	<10	NA	NA	NA	NA	12	11	<20	<10	29	<10	360	79	590	180	<10
	12/30/02 <sup>4</sup>	15,000	NA	NA	3,700	86	81	310	69	<0.5	NA	NA	NA	NA	1.4	0.65	<1.0	<0.5	1.4	<0.5	5.1	2.1	48	32	<0.5
	02/19/03	17,000	NA	NA	4,200	200	660	1,200	64	<1.0	NA	NA	NA	NA	<50	<50	<50	<50	<50	<50	170	53	330	130	<50
	05/15/03	17,000	NA	NA	5,300	200	820	1,000	64	<0.5	NA	NA	NA	NA	<50	<50	<100	<50	57	<50	220	79	280	130	<50
	08/21/03	27,000	NA	NA	4,300	200	740	1,300	<250	<250	NA	NA	NA	NA	<250	<250	<500	<250	<250	<250	<250	<250	380	<250	<250
	11/21/03	14,000	NA	NA	4,300	190	810	610	<50	<50	<50	<50	<50	<1,000	<50	<50	<50	<50	<50	<50	230	68	470	150	<50
	03/04/04	11,000	NA	NA	3,800	180	660	1,153	50	<50	<50	<50	<50	<1,000	<50	<50	<50	<50	<50	<50	210	74	380	140	<50
	06/08/04	9,100	NA	NA	3,200	120	580	870	<50	<50	<50	<50	<50	<1,000	<50	<50	<50	<50	<50	<50	180	<50	290	110	<50
	09/02/04	9,700	NA	NA	4,400	180	850	1,100	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	190	68	470	150	<1.0
	01/04/05	17,000	NA	NA	4,100	140	750	910	<50	<50	<50	<50	<50	<1,000	<50	<50	<50	<50	<50	<50	210	60	360	140	<50

<sup>1</sup> According to the laboratory report, results in the diesel organics range are primarily due to overlap from a gasoline range product

<sup>4</sup> Confirmation sample collected on December 30, 2002, as the sample collected on November 20, 2002 was inadvertently collected from MW-15D and labeled as MW-16.

**Table 15: Monitoring Well Analytical Results**  
**4660 Hessel Road, Sebastopol**

ID	Date	TPH-g	TPH-d	TPH-mo	B	T	E	X	EDC	MTBE	DIPE	ETBE	TAME	TBA	n-butylbenzene	sec-butylbenzene	Methyl ethyl ketone	Styrene	isopropylbenzene	p-isopropyltoluene	naphthalene	n-propylbenzene	1,2,4-trimethylbenzen	1,3,5-trimethylbenzen	Chloroform	
		ug/L																								
MW-16	11/27/00	250	<50	<100	16	2.9	1.4	3.3	3.6	<0.5	<0.5	<0.5	<0.5	<0.5	22	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	02/28/01	300	60	<100	48	0.67	1.5	2.5	3.7	<0.5	<0.5	<0.5	<0.5	<0.5	46	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	05/29/01	390	<50	<100	47	<0.3	<0.5	<0.5	3.4	<0.5	<0.5	<0.5	<0.5	<0.5	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	08/24/01	550	<50	<100	29	<0.3	0.51	0.61	4.9	<0.5	<0.5	<0.5	<0.5	<0.5	33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	11/26/01	370	73	<100	16	0.55	2	3.4	5.9	<0.5	<0.5	<0.5	<0.5	<0.5	34	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	02/26/02	150	<50	<100	15	<0.3	1.2	2.1	2.6	<0.5	<0.5	<0.5	<0.5	<0.5	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	05/30/02	72	<50	<200	9.9	0.52	1.6	2.4	2.1	<1.0	<1.0	<1.0	<1.0	<1.0	<25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	08/27/02	140	NA	NA	7.3	0.4	1.3	1.3	2.8	<0.5	NA	NA	NA	NA	<0.5	<0.5	<0.5	<0.5	0.67	<0.5	<0.5	0.79	<0.5	<0.5	<0.5	
	12/30/02 <sup>4</sup>	200	NA	NA	5.9	<0.3	<0.5	1.2	5.0	<0.5	NA	NA	NA	NA	<0.5	<0.5	<1.0	<0.5	0.84	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	02/19/03	120	NA	NA	4.5	<1.0	<1.0	<1.0	2.7	<1.0	NA	NA	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	05/15/03	110	NA	NA	5.4	<0.3	<0.5	<0.5	2.7	<0.5	NA	NA	NA	NA	<0.5	<0.5	<1.0	<0.5	0.81	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	08/21/03	190	NA	NA	2.8	<1.5	<2.5	<2.5	3.8	<2.5	NA	NA	NA	NA	<2.5	<2.5	<5.0	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	
	11/21/03	190	NA	NA	<1.0	<1.0	<1.0	<1.0	3.8	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	03/03/04	150	NA	NA	1.5	<1.0	<1.0	<1.0	2.4	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	06/08/04	180	NA	NA	<1.0	<1.0	<1.0	<1.0	2.9	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	09/02/04	130	NA	NA	1.2	<1.0	<1.0	<1.0	3.7	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	01/04/05	230	NA	NA	3.9	<1.0	<1.0	1.5	4.3	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-17D	03/02/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	06/08/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	09/02/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	01/04/05	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

<sup>4</sup> Confirmation sample collected on December 30, 2002, as the sample collected on November 20, 2002 was inadvertently collected from MW-15D and labeled as MW-16.

**Table 15: Monitoring Well Analytical Results**  
**4660 Hessel Road, Sebastopol**

ID	Date	TPH-g	TPH-d	TPH-mo	B	T	E	X	EDC	MTBE	DIPE	ETBE	TAME	TBA	n-butylbenzene	sec-butylbenzene	Methyl ethyl ketone	Styrene	isopropylbenzene	p-isopropyltoluene	naphthalene	n-propylbenzene	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Chloroform	
		ug/L																								
MW-18	03/02/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	06/08/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	09/02/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	01/04/05	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
MW-19D	03/03/04	<50	NA	NA	<1.0	<1.0	<1.0	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	8.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	06/08/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	4.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	09/02/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	01/04/05	78	NA	NA	<1.0	2.2	<1.0	6.9	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.8	1.1	<1.0	
MW-20	03/03/04	7,800	NA	NA	400	2,600	460	3,420	<25	<25	<25	<25	<25	<500	<25	<25	<25	<25	26	<25	250	87	1,100	300	<25	
	06/08/04	14,000	NA	NA	320	1,300	240	1,490	<25	<25	<25	<25	<25	<600	<25	<25	<25	<25	<25	<25	120	47	440	140	<25	
	09/02/04	16,000	NA	NA	340	1,700	350	1,830	<25	<25	<25	<25	<25	<500	36	<25	<25	<25	<25	<25	170	78	840	250	<25	
	01/04/05	15,000	NA	NA	330	1,100	150	1,470	<25	<25	<25	<25	<25	<500	<25	<25	<25	<25	<25	<25	140	51	590	180	<25	
Stand Pipe	03/02/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	06/07/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	09/02/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	01/05/05	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Stream 1	03/02/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Stream 2	03/02/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Stream 3	03/02/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Stream 1	06/07/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Stream 2	06/07/04	<50	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Note: TPH-d and TPH-mo removed from analytical suite for all wells with regulatory concurrence in August 20, 2002 letter.

<sup>1</sup> According to the laboratory report, results in the diesel organics range are primarily due to overlap from a gasoline range product

<sup>2</sup> Also ND for TPH-k.

<sup>3</sup> According to laboratory report, gasoline results are primarily due to the presence of benzene.

<sup>4</sup> Confirmation sample collected on December 30, 2002, as the sample collected on November 20, 2002 was inadvertently collected from MW-15D and labeled as MW-16.

## **APPENDIX A**

### **UNIFIED SOIL CLASSIFICATION SYSTEM CHART BORING LOGS FOR B-115 THROUGH B-122**

GENERAL SOIL CATEGORIES			SYMBOLS GRAPHIC LETTER	TYPICAL SOIL TYPES	
<b>COARSE GRAINED SOILS</b> More than half is larger than no. 200 sieve	<b>Gravel</b>  More than half of coarse fraction is larger than No. 4 sieve size	Clean Gravel with little or no fines	 GW	Well Graded Gravels, Gravel - Sand mixtures	
		Gravel with more than 12% fines	 GP	Poorly Graded Gravels, Gravel - Sand mixtures	
			 GM	Silty Gravels, Poorly Graded; Gravel - Sand - Silt Mixtures	
			 GC	Clayey Gravels, Poorly Graded; Gravel - Sand - Clay Mixtures	
	<b>Sand</b>  More than half of coarse fraction is smaller than No. 4 sieve size	Clean Sand with little or no fines	 SW	Well Graded Sands, Gravelly Sands	
			 SP	Poorly Graded Sands, Gravelly Sands	
		Sand with more than 12% fines	 SM	Silty Sands, Poorly Graded; Sand - Silt Mixtures	
			 SC	Clayey Sands, Poorly Graded; Sand - Clay Mixtures	
<b>FINE GRAINED SOILS</b> More than half is smaller than no. 200 sieve	<b>Silt and Clay</b>  Liquid Limit Less than 50%		 ML	Inorganic Silts and Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands or Clayey Silts with Slight Plasticity	
			 CL	Inorganic Clays of Low to Medium Plasticity, Gravelly Clays, Sandy Clays, Silty Clays, Lean Clays	
			 OL	Organic Silts and Organic Silty Clays of Low Plasticity	
			 MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sandy or Silty Soils, Elastic Silts	
	<b>Silt and Clay</b>  Liquid Limit Greater than 50%		 CH	Inorganic Clays of High Plasticity, Fat Clays	
			 OH	Organic Clays of Medium to High Plasticity	
		<b>Highly Organic Soils</b>	 PT	Peat and Other Highly Organic Soils	
		<b>Bedrock</b>	 BR	Bedrock	
<b>Aggregate Base</b>			 B	Mixed Fill	
<b>Asphalt</b>			 A	Asphalt	
<b>Concrete</b>			 C	Concrete	
<input checked="" type="checkbox"/> Soil sample submitted for chemical analysis <input checked="" type="checkbox"/> Soil sample examined for soil classification			Sampler Type CMSS = CA Modified Split Spoon SPT = Standard Penetration Test CBS = Continuous Barrel Sampler GRAB = Grab Sample HA = Hand Auger	 Initial Static Water Level  First Identified Free Water n.a. = not applicable n.r. = not recorded	

**SCS ENGINEERS**

Environmental Consultants  
 3645 Westwind Boulevard  
 Santa Rosa, California 95403  
 Ph.: 707-546-9461 Fax: 707-544-5769

**UNIFIED SOIL CLASSIFICATION SYSTEM CHART  
and BORING LOG LEGEND**

John Riddell  
 4660 Hessel Road  
 Sebastopol, California 95472  
 Job Number: 01203317.00

Figure:

Appendix A  
 A-1  
 1 of 1

Date (start, end): 1/24/05 - 1/24/05  
Drilling Time (start, end) 08:40 - 13:30  
Logged By: Stephen Knüttel  
Checked By:

### Boring No.

B-115

## Boring Location: Hessel Road

See Unified Soil Classification System (USCS) for Legend and information not noted.

Drilling Contractor: Clear Heart Drilling, Inc.

MW Installed: Y  N  if no, boring backfilled with:

Driller's Name: Chris Herrell

Cement  Bentonite: Cement  Grout  Chips

#### Drilling Method: 7- Hollow-Stem Auger

Cement  Bentonite  Cement  Grout  Chips

### Sampling Method: CMSS

Auger Depth, ft: 21.5 Total Depth, ft: 23.0

Hammer weight / fall: 140 lbs / 30 inch

Notes: Water sample at ~4.5'

•

**pd**

Sample	Inches Recovered	Blows / 6 in	Sampler Type	Water Levels	PID (ppm)	Odor	Discoloration	Elevation	Depth in Feet	Graphic Log	Gravel %	Sand %	Slit %	Clay %	Lithologic Description and Drilling Comments:
								132.0							
X	6	12	CMSS	131.8	0	No	No	131.8							
X	6	14						131.5							
X	6	17						130.8							
								130.8	1						
								130.8	2						
								130.8	3		90	10			
								130.8	4		90	10			
								130.8	5		85	10	5		
								130.8	6		85	10	5		
								130.8	7						
								130.8	8						
								130.8	9						
								123.0	10		30	60	5	5	
								123.0	11		30	60	5	5	
								123.0	11						
X	4	27	CMSS	123.0	0	No	No	123.0							
X	6	30						123.0							
X	6	22						123.0							

# SCS ENGINEERS

# BORING LOG B-115

SCS-SANTA ROSA BORING LOG 0120331700 GPJ SCS-SANTA ROSA GDT 04/06/05

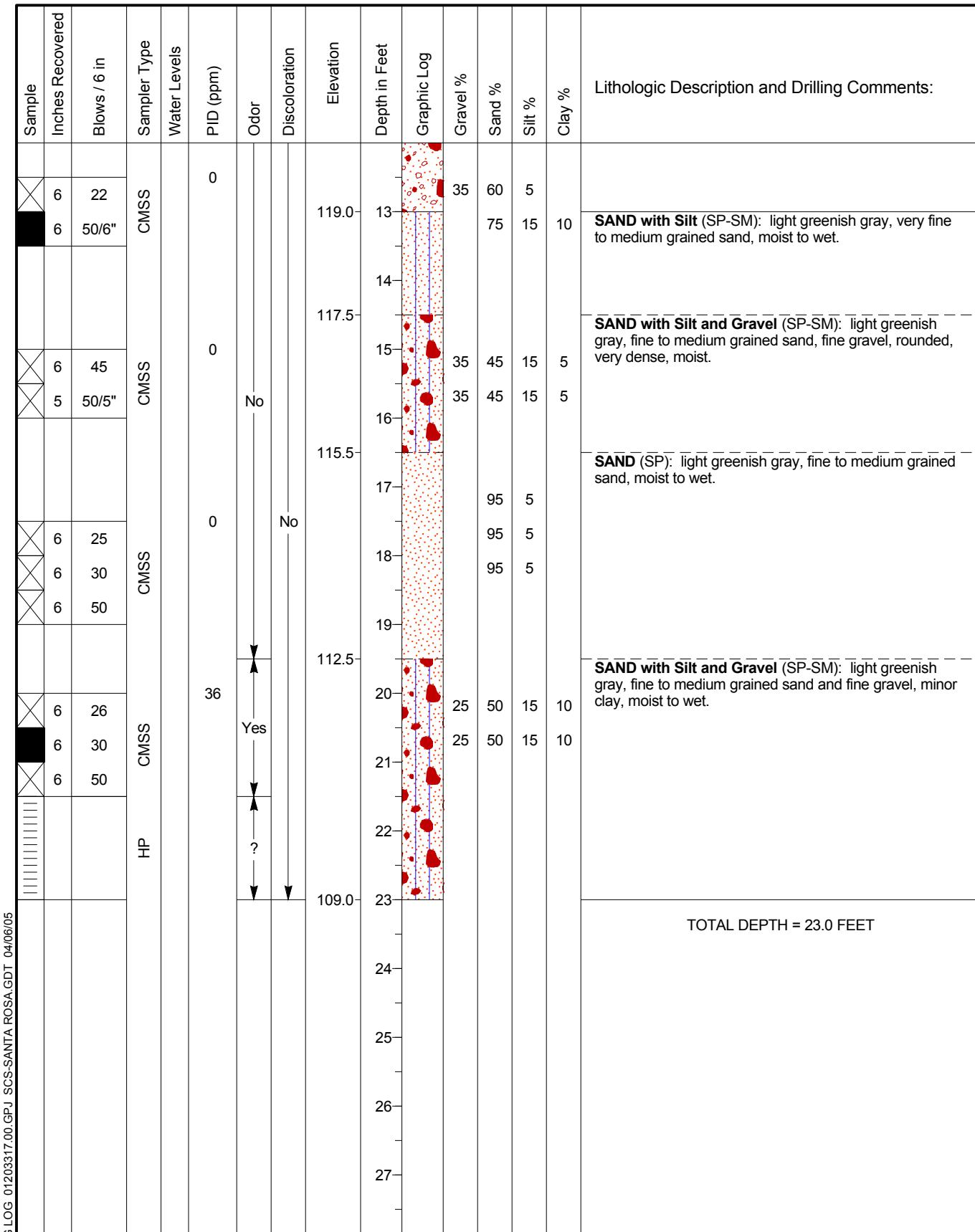
Environmental Consultants  
3645 Westwind Boulevard  
Santa Rosa, California 95403  
Ph.: 707-546-9461 Fax: 707-544-5769

John Riddell  
4660 Hessel Road  
Sebastopol, California 95472  
Job Number: 01203317.00

**Figure:**

Appendix A  
B-115

1 of 2



# SCS ENGINEERS

# BORING LOG B-115

Environmental Consultants  
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Santa Rosa, California 95403  
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John Riddell  
4660 Hessel Road  
Sebastopol, California 95472  
Job Number: 01203317.00

**Figure:**

Appendix A  
B-115  
2 of 2

Date (start, end): 1/24/05 - 1/25/05  
Drilling Time (start, end) 14:00 - 13:30  
Logged By: Stephen Knüttel  
Checked By:

**Boring No.**

B-116

## Boring Location: Hessel Road

See Unified Soil Classification System (USCS) for Legend and information not noted.

Drilling Contractor: Clear Heart Drilling, Inc.

MW Installed: Y  N  if no, boring backfilled with:

Driller's Name: Chris Herrell

Cement  Bentonite: Cement  Grout  Chips

#### Drilling Method: 7- Hollow-Stem Auger

Cement  Bentonite/Cement  Grout  Cr

Sampling Method: CMSS/HF

Auger Depth, ft: 36.5 Total Depth, ft: 40.0

Hammer weight / fall: 140 lbs / 30 inch

Temp. Screen (interval / dia. / slot): 0-5 ft. / 2 in. / 0.01 in.

Notes: Water in hole to ~3.5' after ~5 minutes

For more information about the study, please contact Dr. Michael J. Hwang at (319) 356-4000 or email at [mhwang@uiowa.edu](mailto:mhwang@uiowa.edu).

pea

# SCS ENGINEERS

# BORING LOG B-116

SSCS-SANTA ROSA BORING LOG 01203331700.GPJ SCS-SANTA ROSA.GDT 04/06/05

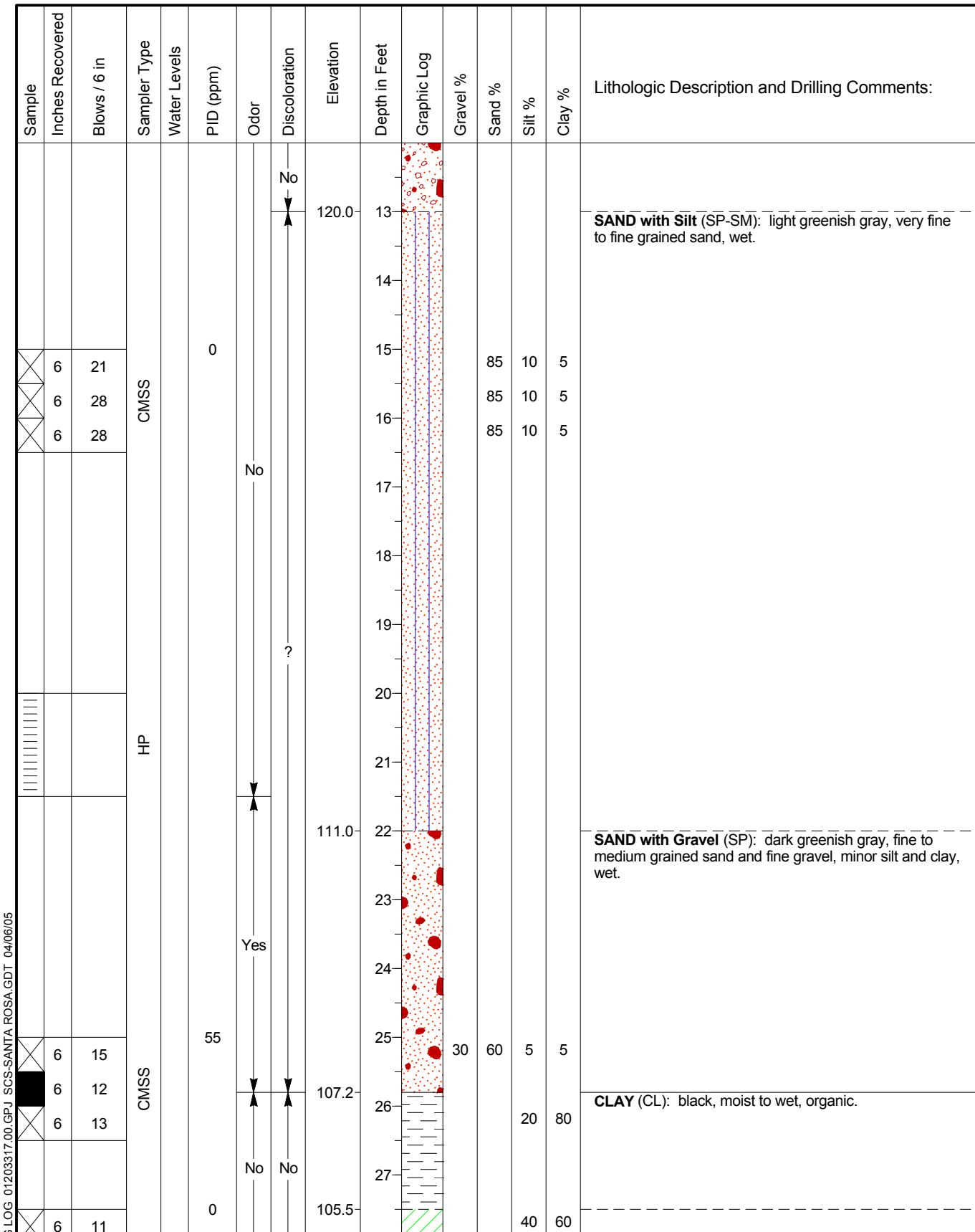
Environmental Consultants  
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Santa Rosa, California 95403  
Ph.: 707-546-9461 Fax: 707-544-5769

John Riddell  
4660 Hessel Road  
Sebastopol, California 95472  
Job Number: 01203317.00

**Figure:**

Appendix A  
B-116

1 of 3



SCS ENGINEERS

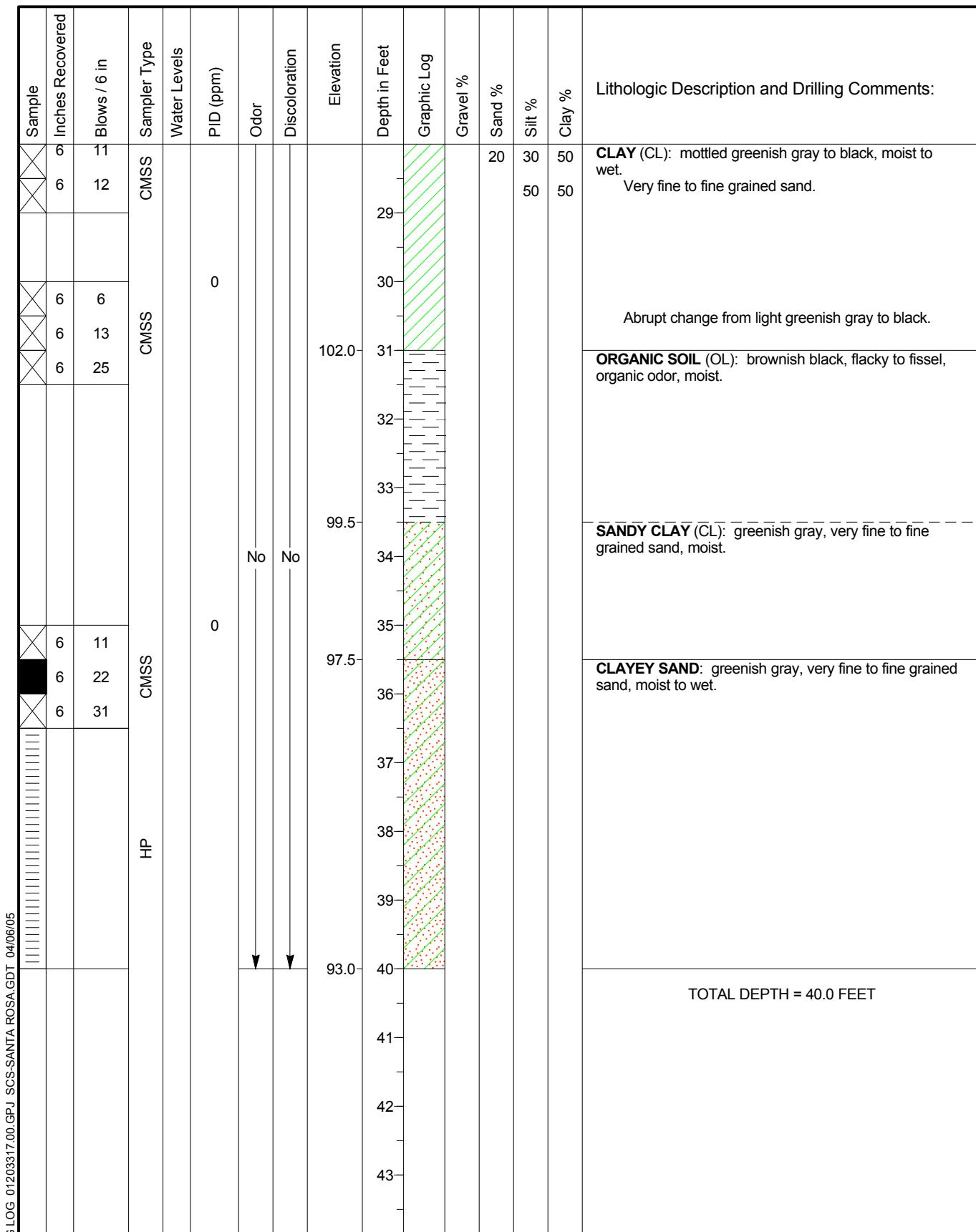
# BORING LOG B-116

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John Riddell  
4660 Hessel Road  
Sebastopol, California 95472  
Job Number: 01203317.00

**Figure:**

Appendix A  
B-116  
2 of 3



# SCS ENGINEERS

# BORING LOG B-116

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John Riddell  
4660 Hessel Road  
Sebastopol, California 95472  
Job Number: 01203317.00

**Figure:**

Appendix A  
B-116

3 of 3

Date (start, end): 1/24/05 - 1/25/05  
Drilling Time (start, end) 15:40 - 16:30  
Logged By: Stephen Knüttel  
Checked By:

### Boring No.

## Boring Location: Hessel Road

B-117

See Unified Soil Classification System (USCS) for Legend and information not noted.

Drilling Contractor: Clear Heart Drilling, Inc.

MW Installed: Y  N  if no, boring backfilled with:

Driller's Name: Chris Herrell

Cement  Bentonite: Cement  Grout  Chips

#### Drilling Method: 7- Hollow-Stem Auger

Cement  Bentonite  Cement  Grout  Ch

Sampling Method: CMSS

Auger Depth, ft: 35.0 Total Depth, ft: 40.0

Hammer weight / fall: 140 lbs / 30 inch

Temp. Screen (interval / dia. / slot): 0-5 ft. / 2 in. / 0.01 in.

#### Notes: Lithology

[View Details](#) [Edit](#) [Delete](#)

**SCS ENGINEERS**

# BORING LOG B-117

SCS-SANTA ROSA BOARING LOG 01203317.00.GPY SCS-SANTA ROSA.GBT 04/06/05

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Ph.: 707-546-9461 Fax: 707-544-5769

John Riddell  
4660 Hessel Road  
Sebastopol, California 95472  
Job Number: 01203317.00

**Figure:**

Appendix A  
B-117

1 of 3

# SCS ENGINEERS

## BORING LOG B-117

Environmental Consultants  
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Ph.: 707-546-9461 Fax: 707-544-5769

John Riddell  
4660 Hessel Road  
Sebastopol, California 95472  
Job Number: 01203317.00

**Figure:**

Appendix A  
B-117  
2 of 3

Lithologic Description and Drilling Comments:							
Sample Inches Recovered	Blows / 6 in	Sampler Type	Water Levels	PID (ppm)	Odor	Discoloration	Elevation
							29
							30
							31
							32
							33
							34
							35
							36
							37
							38
							39
							40
							41
							42
							43
		HP					Depth in Feet
							Graphic Log
							Gravel %
							Sand %
							Silt %
							Clay %
							TOTAL DEPTH = 40.0 FEET
<b>SCS ENGINEERS</b>				<b>BORING LOG B-117</b>			
Environmental Consultants 3645 Westwind Boulevard Santa Rosa, California 95403 Ph.: 707-546-9461 Fax: 707-544-5769				John Riddell 4660 Hessel Road Sebastopol, California 95472 Job Number: 01203317.00			
				Figure: Appendix A B-117 3 of 3			

Date (start, end): 1/24/05 - 1/27/05  
Drilling Time (start, end) 15:50 - 17:00  
Logged By: Stephen Knüttel  
Checked By:

**Boring No.**

B-118

## Boring Location: Hessel Road

See Unified Soil Classification System (USCS) for Legend and information not noted.

Drilling Contractor: Clear Heart Drilling, Inc.

MW Installed: Y  N  if no, boring backfilled with:

Driller's Name: Chris Herrell/ Pablo Gonzales

Cement  Bentonite: Cement  Grout  Chips

#### Drilling Method: 7- Hollow-Stem Auger

Cement  Bentonite/Cement  Grout  Chip

### Sampling Method: CMSS

Auger Depth, ft: 35.0 Total Depth, ft: 40.0

Hammer weight / fall: 140 lbs / 30 inch

Temp. Screen (interval / dia. / slot): 0-5 ft. / 2 in. / 0.01

Notes: Hole drilled to 5ft and t

40ft on 1/27/05

After being invited to sit and stamp certain books on the Web, we're continuing to review them.

# SCS ENGINEERS

# BORING LOG B-118

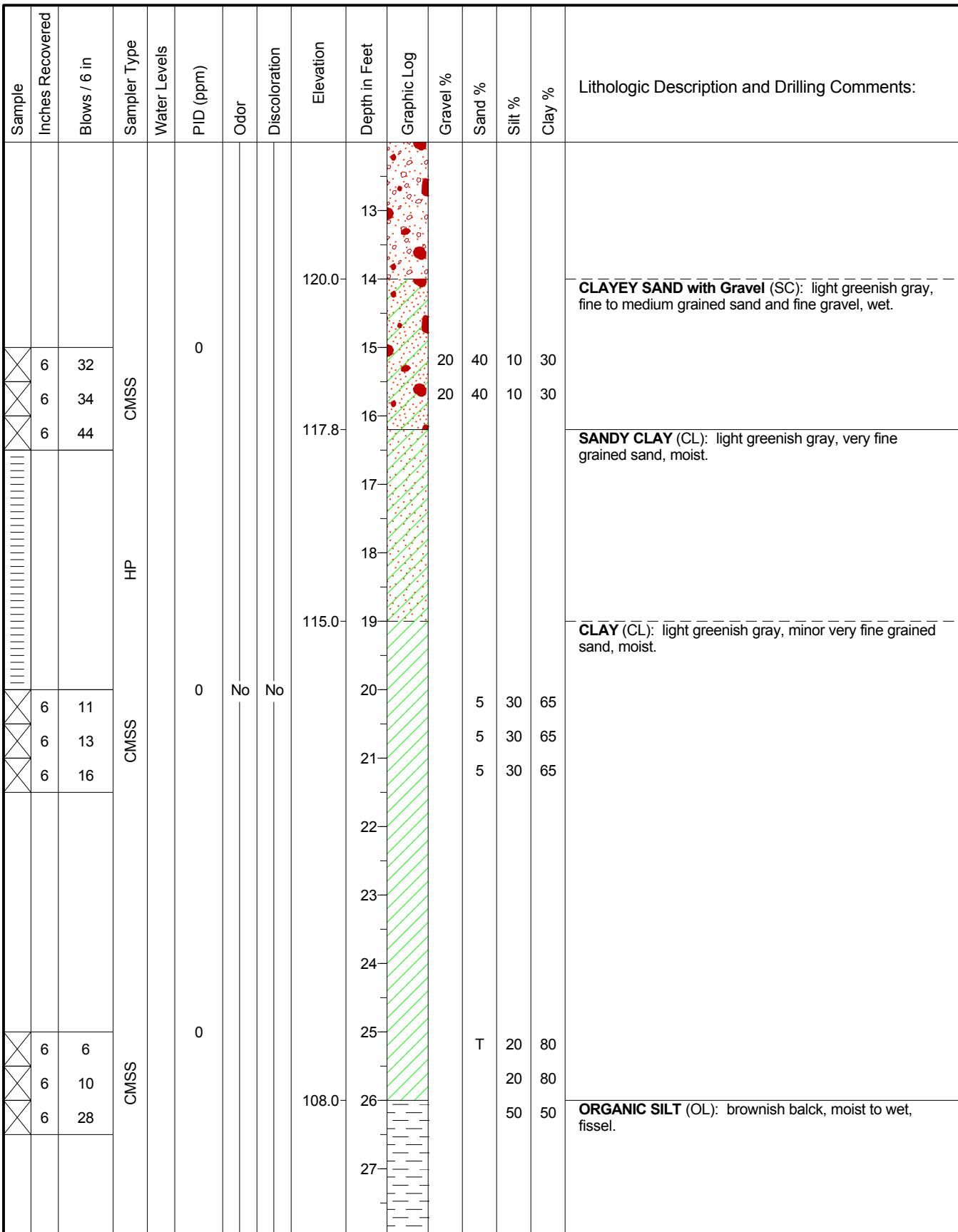
Environmental Consultants  
3645 Westwind Boulevard  
Santa Rosa, California 95403  
Ph.: 707-546-9461 Fax: 707-544-5769

John Riddell  
4660 Hessel Road  
Sebastopol, California 95472  
Job Number: 01203317.00

**Figure:**

Appendix A  
B-118

1 of 3



# SCS ENGINEERS

# BORING LOG B-118

CS-SANTA ROSA  
Environmental Consultants  
3645 Westwind Boulevard  
Santa Rosa, California 95403  
Ph.: 707-546-9461 Fax: 707-544-5769

John Riddell  
4660 Hessel Road  
Sebastopol, California 95472  
Job Number: 01203317.00

**Figure:**

Appendix A  
B-118  
2 of 3

# SCS ENGINEERS

# BORING LOG B-118

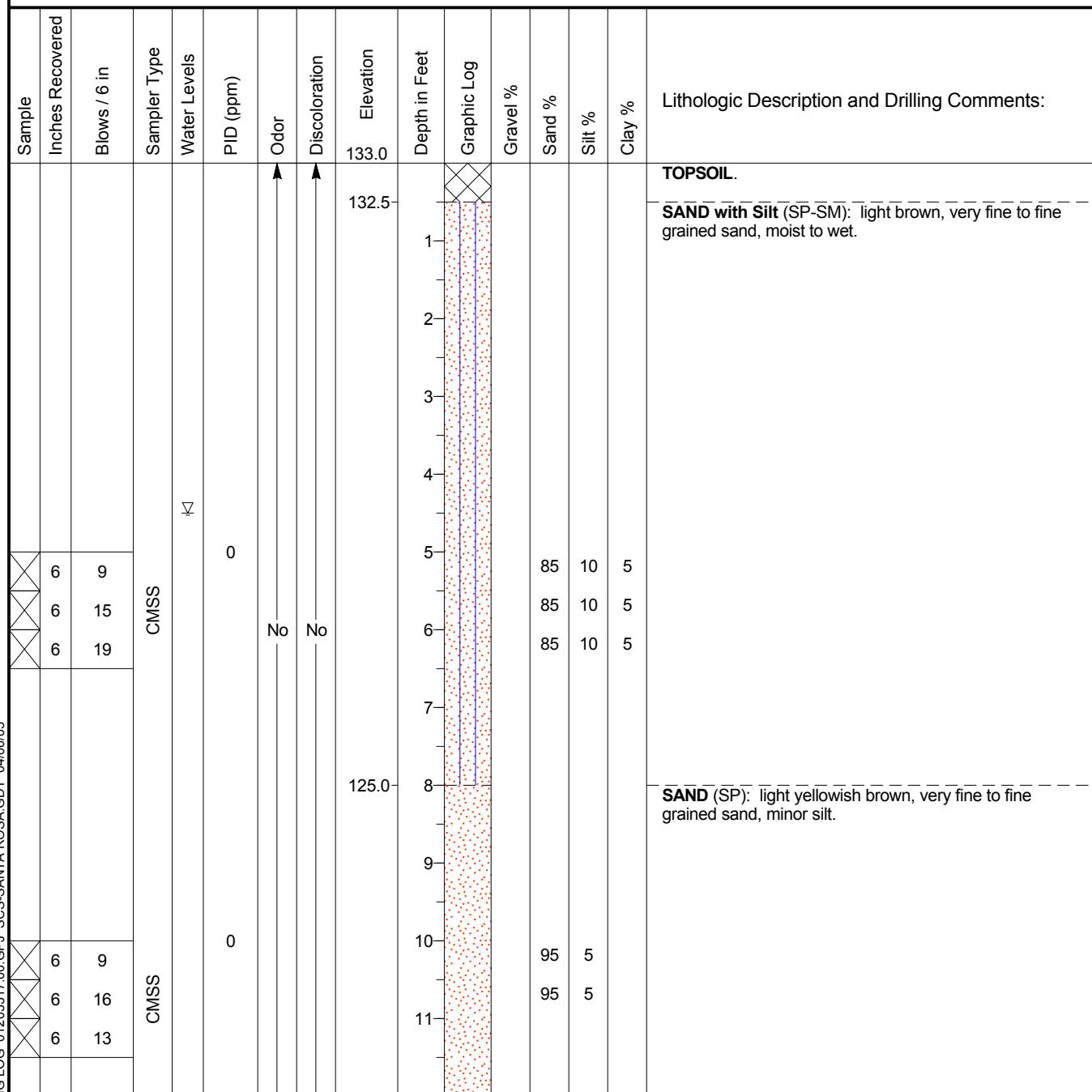
Environmental Consultants  
3645 Westwind Boulevard  
Santa Rosa, California 95403  
Ph.: 707-546-9461 Fax: 707-544-5769

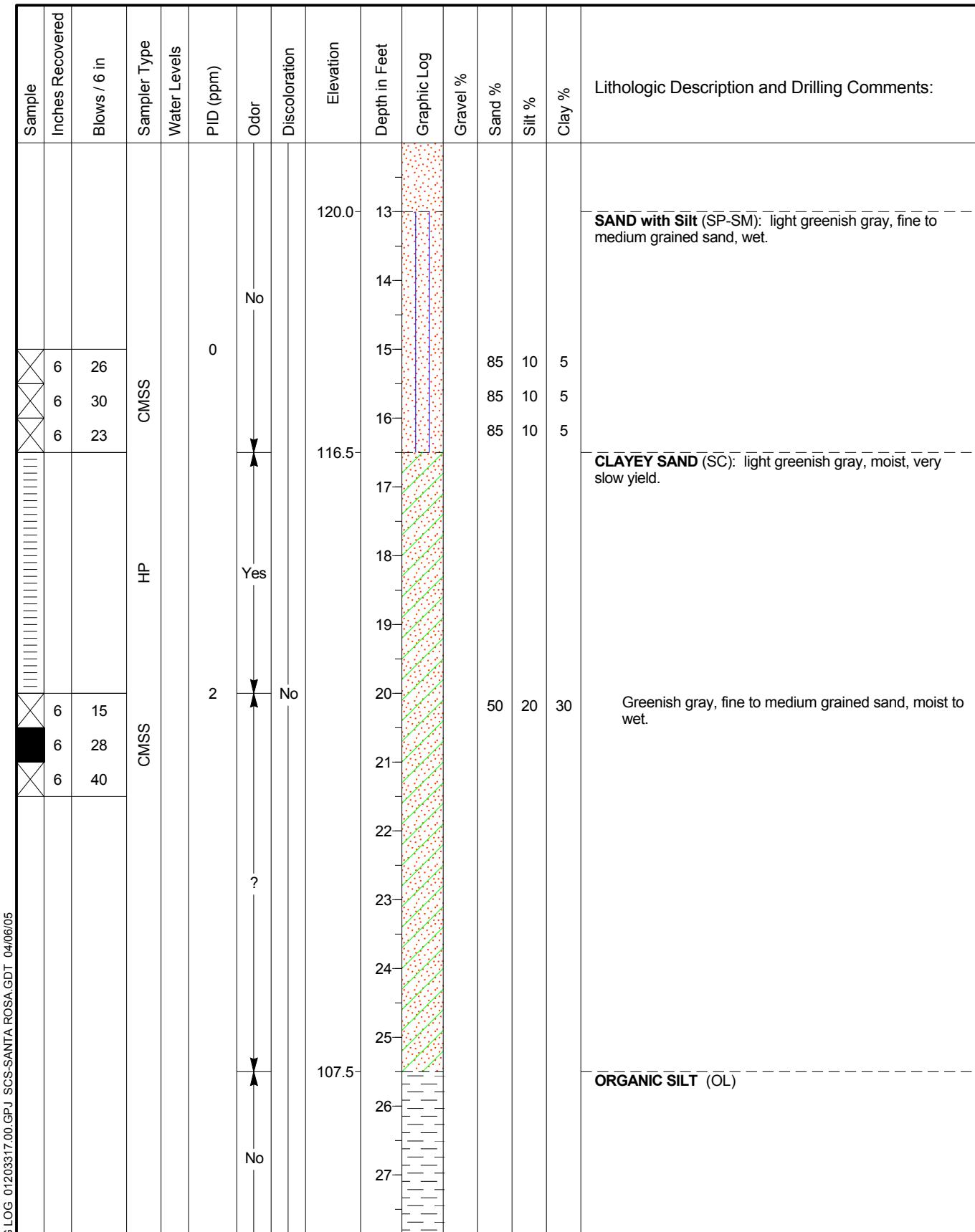
John Riddell  
4660 Hessel Road  
Sebastopol, California 95472  
Job Number: 01203317.00

**Figure:**

Appendix A  
B-118  
3 of 3

Date (start, end): 1/26/05 - 1/26/05	Boring No. B-119	Boring Location: See Site Plan
Drilling Time (start, end) 10:00 - 17:45		
Logged By: Stephen Knüttel		See Unified Soil Classification System (USCS) for Legend and information not noted.
Checked By:		
Drilling Contractor: Clear Heart Drilling, Inc.	MW Installed: Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	if no, boring backfilled with:
Driller's Name: Chris Herrell	Cement <input type="checkbox"/>	Bentonite: Cement <input type="checkbox"/> Grout <input type="checkbox"/> Chips <input type="checkbox"/>
Drilling Method: 7-in Hollow-Stem Auger	Auger Depth, ft: 35.0	Total Depth, ft: 38.5
Sampling Method: CMSS		
Hammer weight / fall: 140 lbs / 30 inch		
Notes:		





# SCS ENGINEERS

# BORING LOG B-119

Environmental Consultants  
3645 Westwind Boulevard  
Santa Rosa, California 95403  
Ph.: 707-546-9461 Fax: 707-544-5769

John Riddell  
4660 Hessel Road  
Sebastopol, California 95472  
Job Number: 01203317.00

**Figure:**

Appendix A  
B-119  
2 of 3

Sample	Inches Recovered	Blows / 6 in	Sampler Type	Water Levels	PID (ppm)	Odor	Discoloration	Elevation	Depth in Feet	Graphic Log	Gravel %	Sand %	Silt %	Clay %	Lithologic Description and Drilling Comments:
									104.5						
	6	19			0				29						
	6	20				No			30						
	6	22				No	No		31						
									32						
									33						
									34						
									35						
									36						
									37						
									38						
									94.5						
									39						
									40						
									41						
									42						
									43						
															TOTAL DEPTH = 38.5 FEET

# SCS ENGINEERS

# BORING LOG B-119

Environmental Consultants  
3645 Westwind Boulevard  
Santa Rosa, California 95403  
Ph.: 707-546-9461 Fax: 707-544-5769

John Riddell  
4660 Hessel Road  
Sebastopol, California 95472  
Job Number: 01203317.00

**Figure:**

Appendix A  
B-119  
3 of 3

Date (start, end): 2/7/05 - 2/7/05  
Drilling Time (start, end) 10:30 - 17:00  
Logged By: Stephen Knüttel  
Checked By:

### Boring No.

B-120

Boring Location: See Site Plan

See Unified Soil Classification System (USCS) for Legend and information not noted.

Drilling Contractor: Clear Heart Drilling, Inc.  
Driller's Name: Chris Herrell / Javier Baroza  
Drilling Method: 7-in Hollow-Stem Auger  
Sampling Method: CMSS  
Hammer weight / fall: 140 lbs / 30 inch  
Notes:

MW Installed: Y  N  if no, boring backfilled with:  
Cement  Bentonite: Cement  Grout  Chips   
Auger Depth, ft: 35.0 Total Depth, ft: 39.0

Auger Depth, ft: 35.0 Total Depth, ft: 39.0

# SCS ENGINEERS

# BORING LOG B-120

SCS-SCCS-SANTA ROSA BORING LOG 012033317.00.GPJ SCS-SANTA ROSA.GDT 04/06/05

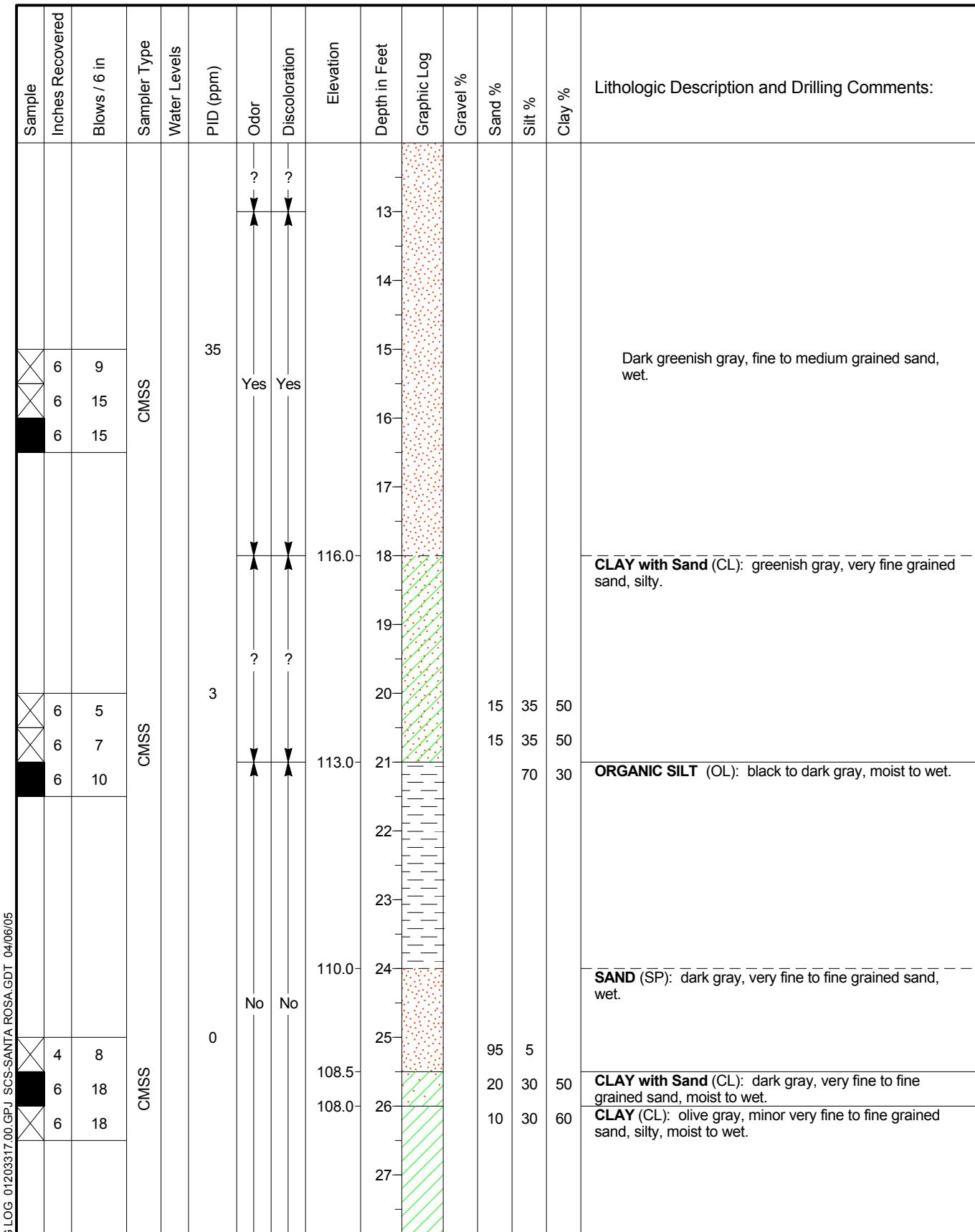
Environmental Consultants  
3645 Westwind Boulevard  
Santa Rosa, California 95403  
Ph.: 707-546-9461 Fax: 707-544-5769

John Riddell  
4660 Hessel Road  
Sebastopol, California 95472  
Job Number: 01203317.00

**Figure:**

## Appendix A B-120

1 of 3



# SCS ENGINEERS

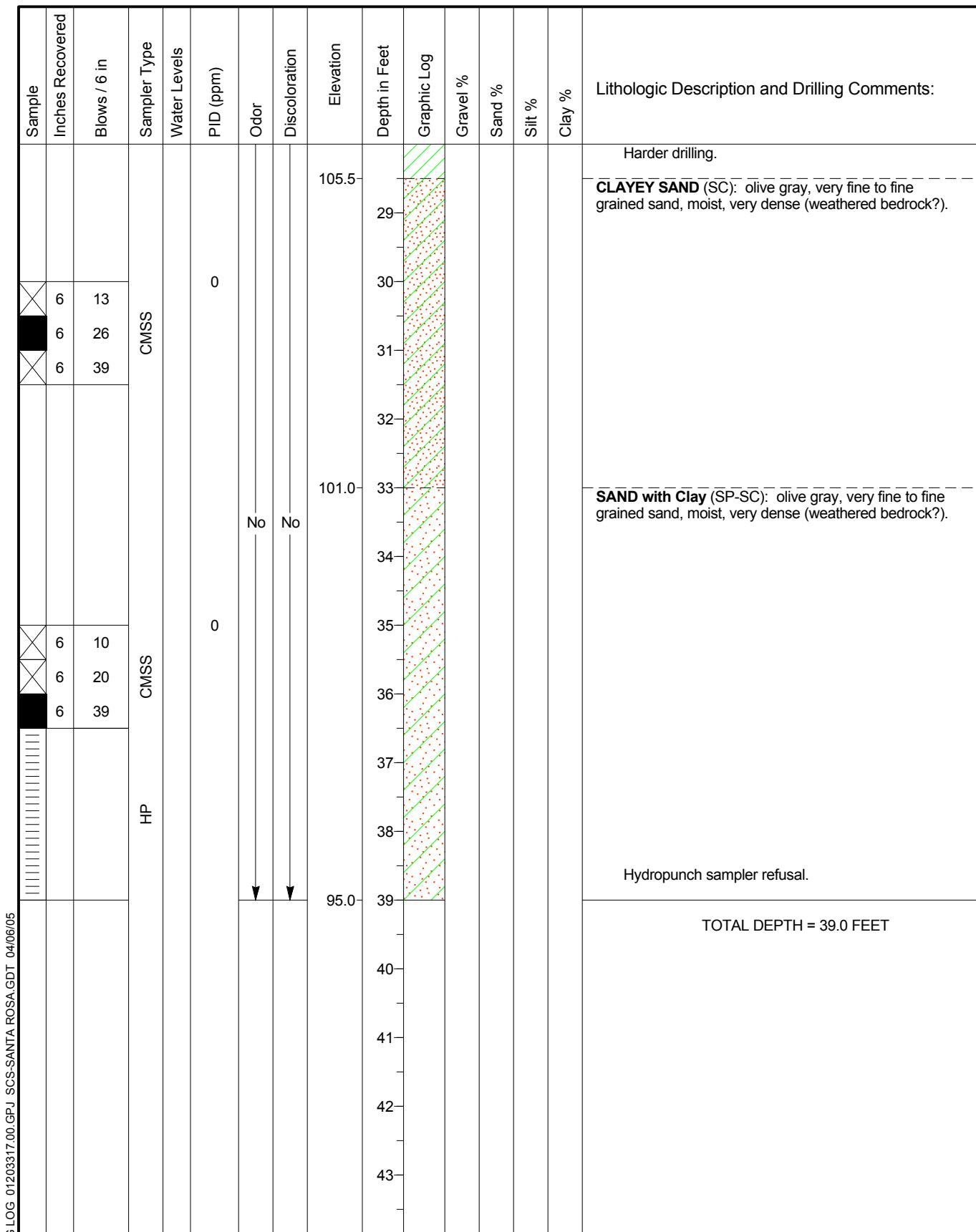
# BORING LOG B-120

Environmental Consultants  
3645 Westwind Boulevard  
Santa Rosa, California 95403  
Ph.: 707-546-9461 Fax: 707-544-5769

John Riddell  
4660 Hessel Road  
Sebastopol, California 95472  
Job Number: 01203317.00

**Figure:**

Appendix A  
B-120  
2 of 3



SSCS-SCS-SANTA ROSA BORING LOG 01203317.00.GPJ SCS-SANTA ROSA.GDT 04/06/05

# SCS ENGINEERS

# BORING LOG B-120

Environmental Consultants  
3645 Westwind Boulevard  
Santa Rosa, California 95403  
Ph.: 707-546-9461 Fax: 707-544-5769

John Riddell  
4660 Hessel Road  
Sebastopol, California 95472  
Job Number: 01203317.00

**Figure:**

Appendix A  
B-120  
3 of 3

Date (start, end): 2/8/05 - 2/8/05  
Drilling Time (start, end) 09:15 - 15:40  
Logged By: Stephen Knüttel  
Checked By:

### Boring No.

Boring Location: See Site Plan

B-121

See Unified Soil Classification System (USCS) for Legend and information not noted.

Drilling Contractor: Clear Heart Drilling, Inc.

MW Installed: Y  N  if no, boring backfilled with:

Driller's Name: Javier Baroza

Cement  Bentonite: Cement  Grout  Chips

#### Drilling Method: 7-in Hollow-Stem Auger

Cement  Bentonite: Cement  Grout  Cr

### Sampling Method: CMSS

Auger Depth, ft: 30.0 Total Depth, ft: 35.0

Hammer weight / fall: 140 lbs / 30 inch

Temp. Screen (interval / dia. / slot): 0-5 ft. / 2 in. / 0.02 in.

#### Notes:

\_\_\_\_\_

Sample	Inches Recovered	Blows / 6 in	Sampler Type	Water Levels	PID (ppm)	Odor	Discoloration	Elevation	Depth in Feet	Graphic Log	Gravel %	Sand %	Silt %	Clay %	Lithologic Description and Drilling Comments:
								134.0							<b>TOPSOIL.</b>
								133.7	1	X X X X					<b>SILTY SAND (SM):</b> dark brown, very fine to fine grained sand, moist to wet.
								132.0	2						<b>SAND with Silt (SP-SM):</b> light brown mottled with yellowish brown, very fine to fine grained sand, trace fine gravel, moist to wet.
								133.7	3						
								132.0	4						
								130.0	5						
								128.0	6						
								126.0	7						
								124.0	8						
								122.0	9						
								120.0	10						
								118.0	11						
								116.0	12						
								114.0	13						
								112.0	14						
								110.0	15						
								108.0	16						
								106.0	17						
								104.0	18						
								102.0	19						
								100.0	20						
								98.0	21						
								96.0	22						
								94.0	23						
								92.0	24						
								90.0	25						
								88.0	26						
								86.0	27						
								84.0	28						
								82.0	29						
								80.0	30						
								78.0	31						
								76.0	32						
								74.0	33						
								72.0	34						
								70.0	35						
								68.0	36						
								66.0	37						
								64.0	38						
								62.0	39						
								60.0	40						
								58.0	41						
								56.0	42						
								54.0	43						
								52.0	44						
								50.0	45						
								48.0	46						
								46.0	47						
								44.0	48						
								42.0	49						
								40.0	50						
								38.0	51						
								36.0	52						
								34.0	53						
								32.0	54						
								30.0	55						
								28.0	56						
								26.0	57						
								24.0	58						
								22.0	59						
								20.0	60						
								18.0	61						
								16.0	62						
								14.0	63						
								12.0	64						
								10.0	65						
								8.0	66						
								6.0	67						
								4.0	68						
								2.0	69						
								0.0	70						

**SCS ENGINEERS**

# BORING LOG B-121

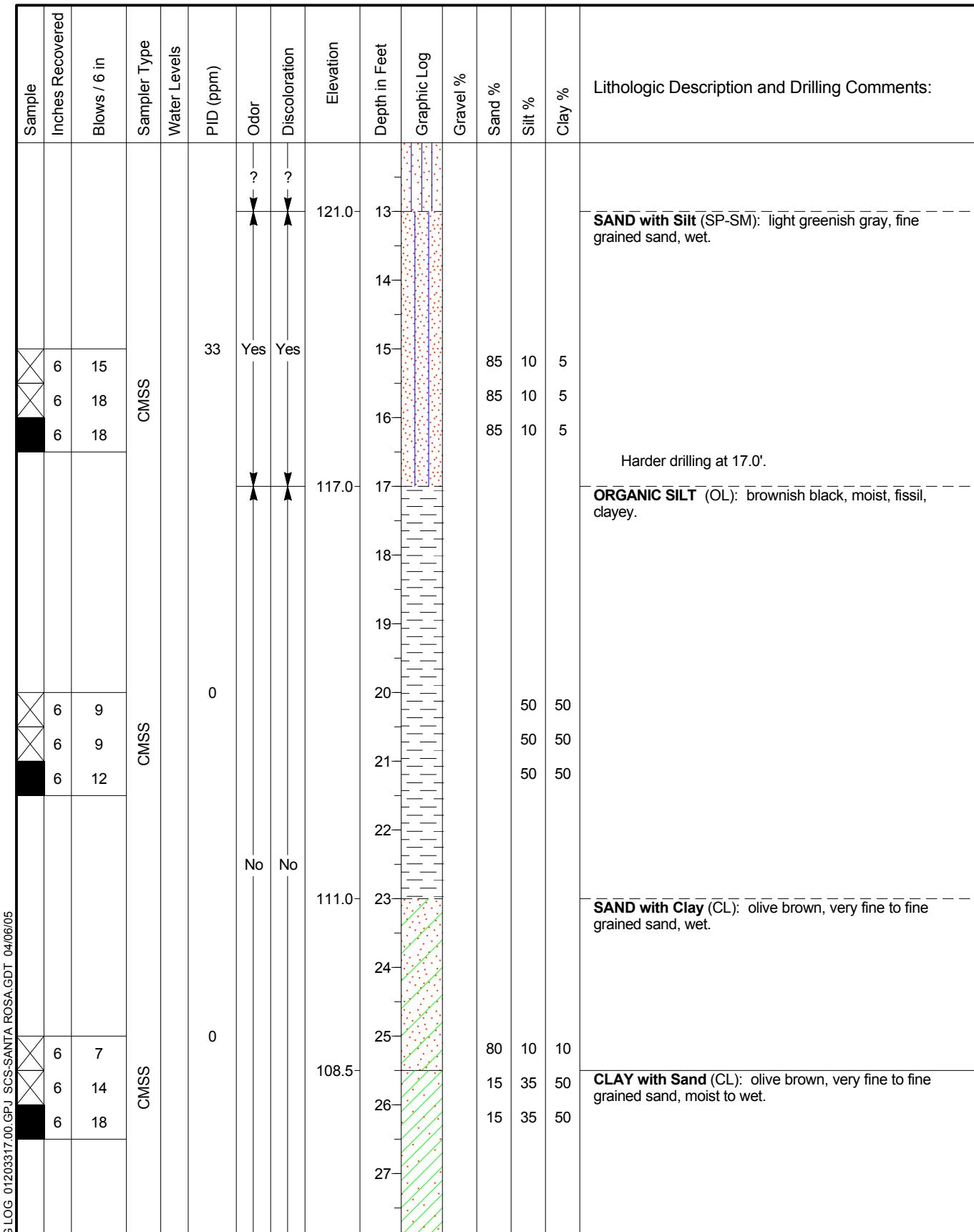
Environmental Consultants  
3645 Westwind Boulevard  
Santa Rosa, California 95403  
Ph.: 707-546-9461 Fax: 707-544-5769

John Riddell  
4660 Hessel Road  
Sebastopol, California 95472  
Job Number: 01203317.00

**Figure:**

## Appendix A B-121

1 of 3



# SCS ENGINEERS

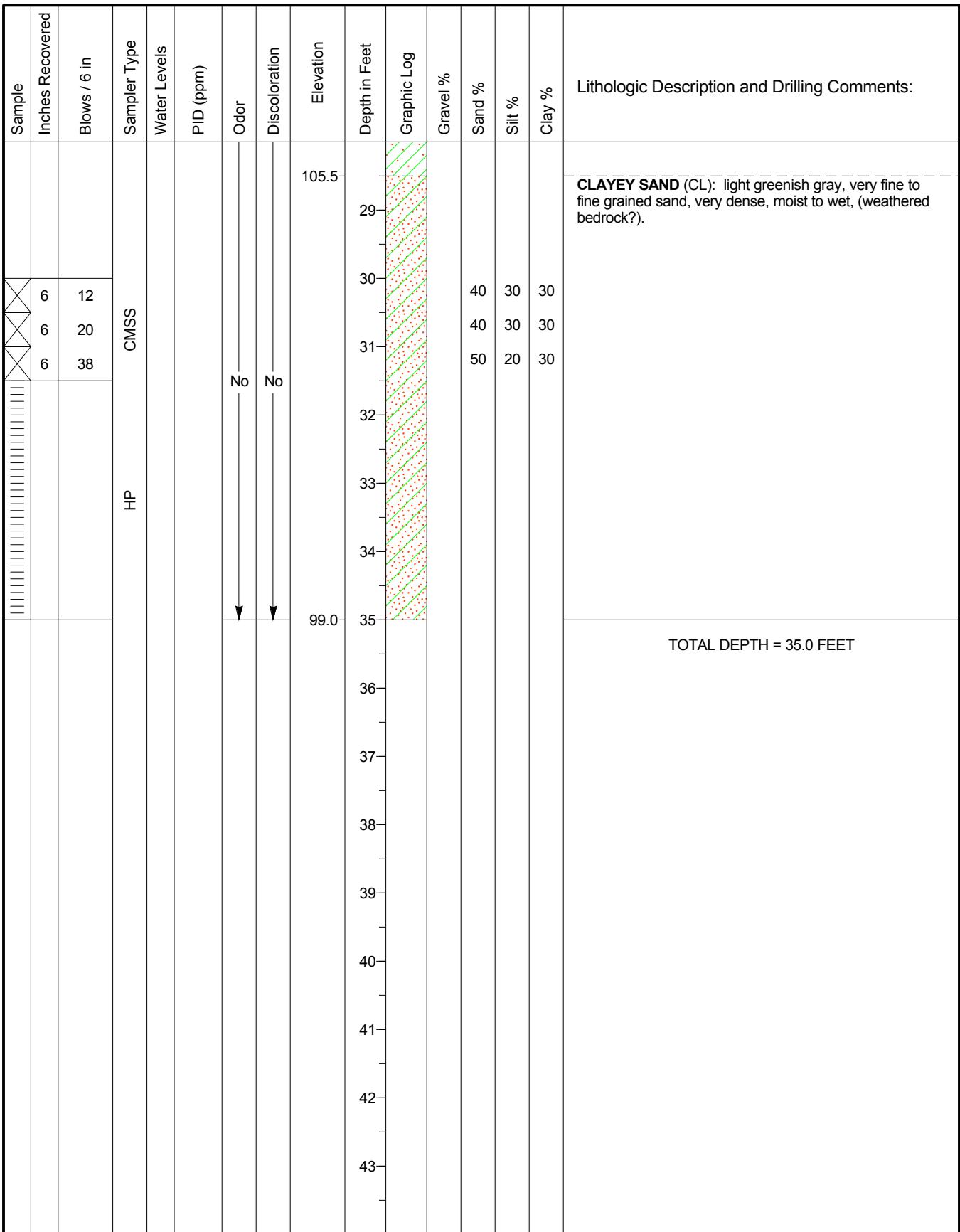
# BORING LOG B-121

Environmental Consultants  
3645 Westwind Boulevard  
Santa Rosa, California 95403  
Ph.: 707-546-9461 Fax: 707-544-5769

John Riddell  
4660 Hessel Road  
Sebastopol, California 95472  
Job Number: 01203317.00

**Figure:**

Appendix A  
B-121  
2 of 3



# SCS ENGINEERS

# BORING LOG B-121

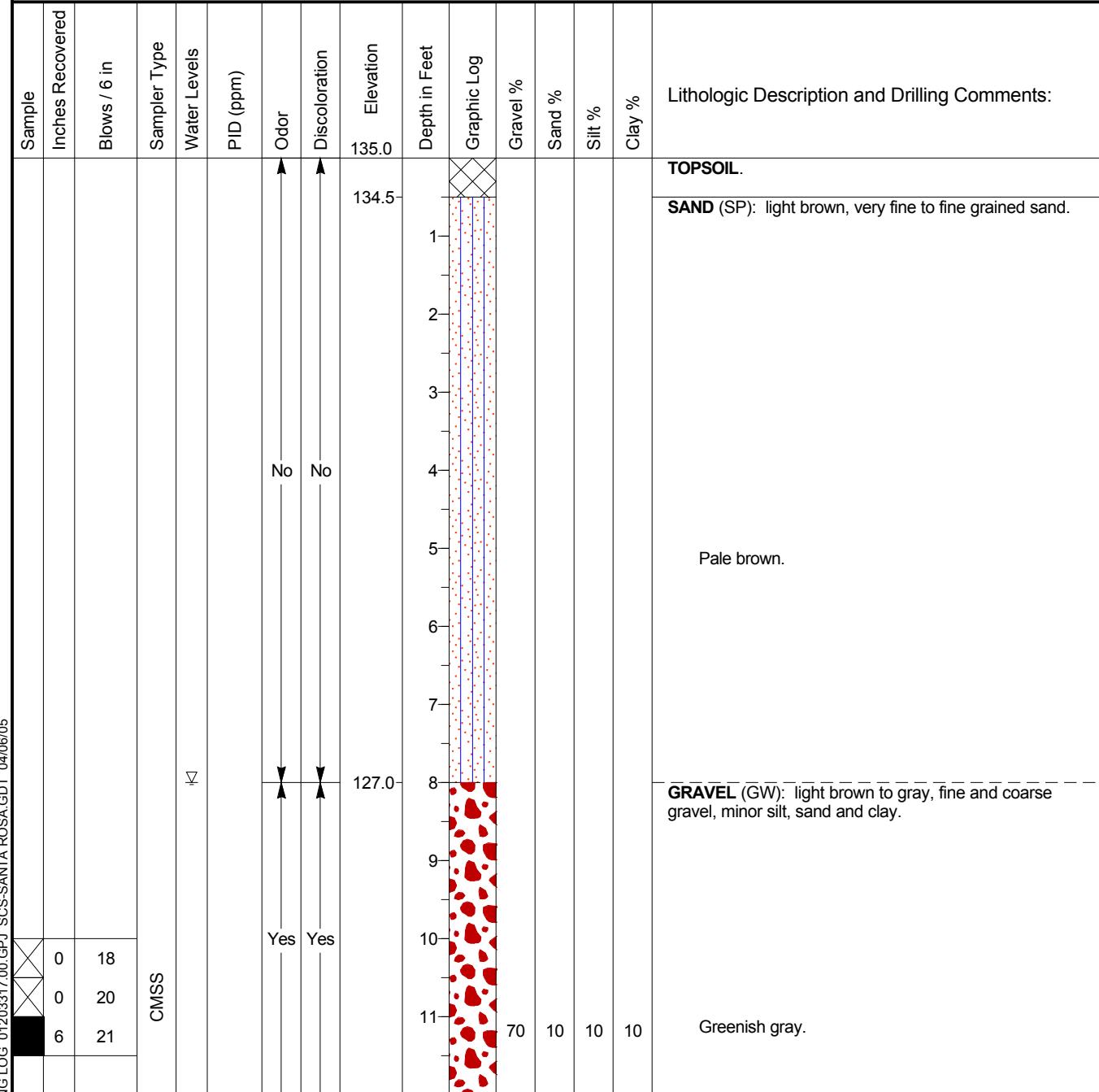
Environmental Consultants  
3645 Westwind Boulevard  
Santa Rosa, California 95403  
Ph.: 707-546-9461 Fax: 707-544-5769

John Riddell  
4660 Hessel Road  
Sebastopol, California 95472  
Job Number: 01203317.00

**Figure:**

Appendix A  
B-121  
3 of 3

Date (start, end): 2/9/05 - 2/9/05 Drilling Time (start, end) 08:30 - 14:30 Logged By: Stephen Knüttel Checked By:	Boring No. <b>B-122</b>	Boring Location: See Site Plan See Unified Soil Classification System (USCS) for Legend and information not noted.
Drilling Contractor: Clear Heart Drilling, Inc. Driller's Name: Javier Baroza Drilling Method: 7-in Hollow-Stem Auger Sampling Method: CMSS Hammer weight / fall: 140 lbs / 30 inch Notes: Hand augered to 5.0'	MW Installed: Y <input type="checkbox"/> N <input checked="" type="checkbox"/> if no, boring backfilled with: Cement <input type="checkbox"/> Bentonite: Cement <input checked="" type="checkbox"/> Grout <input type="checkbox"/> Chips <input type="checkbox"/> Auger Depth, ft: 30.0 Total Depth, ft: 34.0	



SCS-SANTA ROSA BORING LOG 01203317.00 GPU SCS-SANTA ROSA GDT 04/06/05

**SCS ENGINEERS**

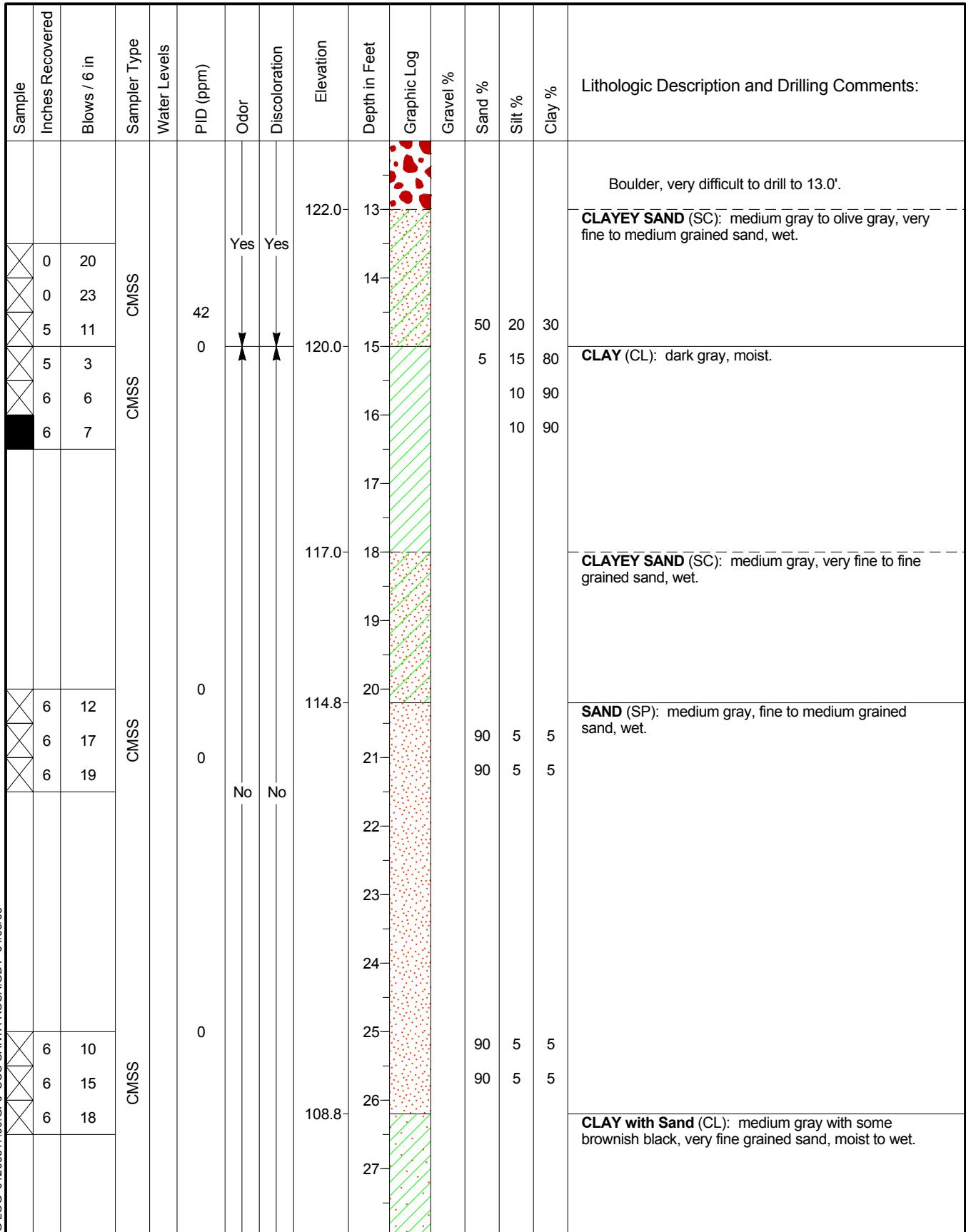
Environmental Consultants  
3645 Westwind Boulevard  
Santa Rosa, California 95403  
Ph.: 707-546-9461 Fax: 707-544-5769

## BORING LOG B-122

John Riddell  
4660 Hessel Road  
Sebastopol, California 95472  
Job Number: 01203317.00

Figure:

Appendix A  
B-122  
1 of 3

**SCS ENGINEERS**

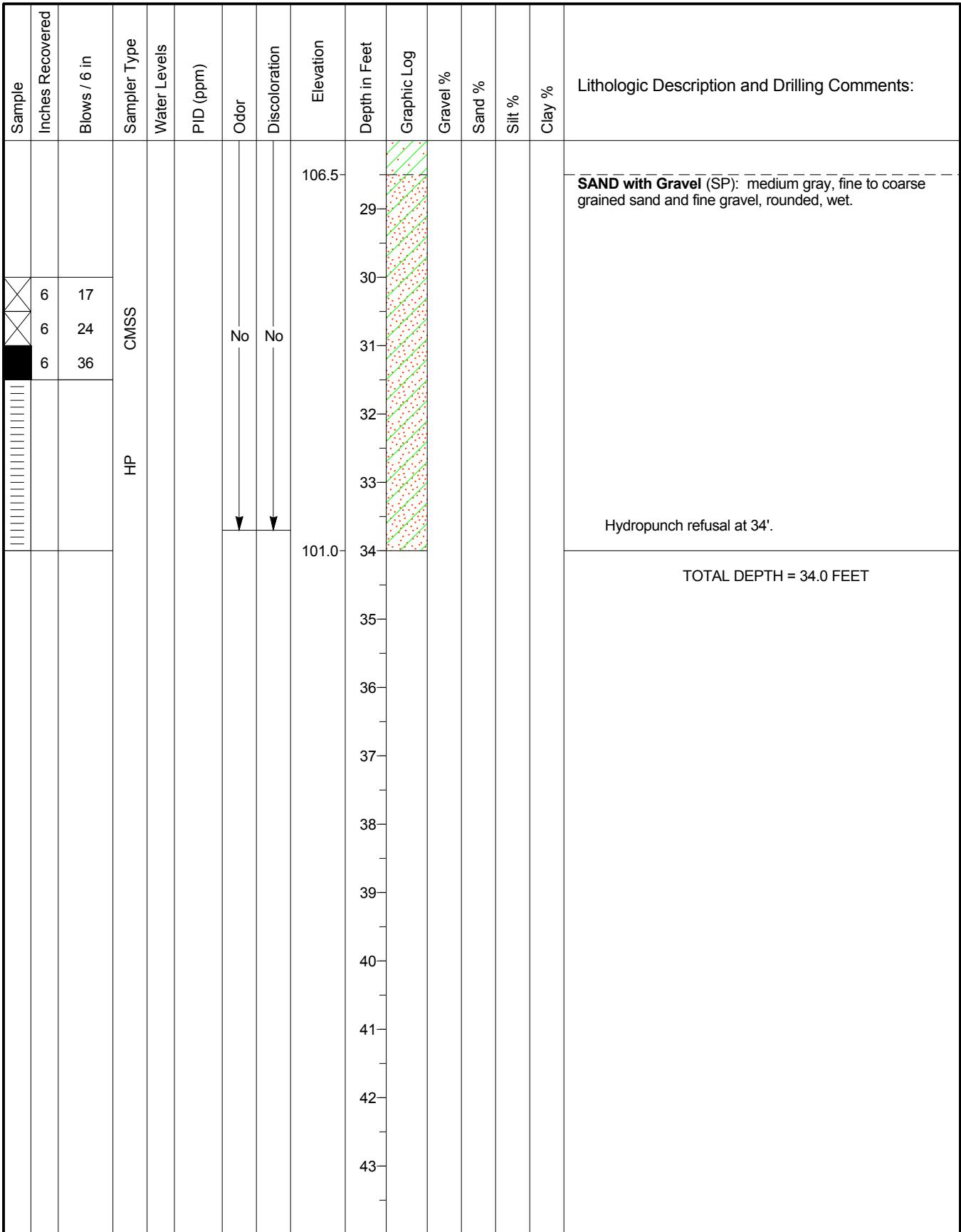
Environmental Consultants  
3645 Westwind Boulevard  
Santa Rosa, California 95403  
Ph.: 707-546-9461 Fax: 707-544-5769

**BORING LOG B-122**

John Riddell  
4660 Hessel Road  
Sebastopol, California 95472  
Job Number: 01203317.00

Figure:

Appendix A  
B-122  
2 of 3



# SCS ENGINEERS

# BORING LOG B-122

Environmental Consultants  
3645 Westwind Boulevard  
Santa Rosa, California 95403  
Ph.: 707-546-9461 Fax: 707-544-5769

John Riddell  
4660 Hessel Road  
Sebastopol, California 95472  
Job Number: 01203317.00

**Figure:**

Appendix A  
B-122  
3 of 3

**APPENDIX B**

**LABORATORY ANALYTICAL REPORTS**



Report Date: February 7, 2005

Stephen Knuttel  
SCS Engineers  
3645 Westwind Blvd.  
Santa Rosa, CA 95403

## **LABORATORY REPORT**

Project Name: **Hessel Rd.** **01203317.00**

Lab Project Number: **5012501**

This 24 page report of analytical data has been reviewed and approved for release.

Mark A. Valentini, Ph.D.  
Laboratory Director



## TPH Gasoline in Water

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
27938	B-115-W@ 4.0'	TPH/Gasoline	ND	50

Date Sampled: 01/24/05	Date Analyzed: 01/25/05	QC Batch #: 5235
Date Received: 01/25/05	Method: EPA 5030/8015M	

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
27941	B-115-W@ 21.5'	TPH/Gasoline	1,400	50

Date Sampled: 01/24/05	Date Analyzed: 01/25/05	QC Batch #: 5235
Date Received: 01/25/05	Method: EPA 5030/8015M	

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
27942	B-116-W@ 3.0'	TPH/Gasoline	ND	50

Date Sampled: 01/24/05	Date Analyzed: 01/25/05	QC Batch #: 5235
Date Received: 01/25/05	Method: EPA 5030/8015M	



Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
27943	B-117-W@ 3.0'	TPH/Gasoline	ND	50

Date Sampled:	01/24/05	Date Analyzed:	01/25/05	QC Batch #:	5235
Date Received:	01/25/05	Method:	EPA 5030/8015M		

---

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
27944	B-118-W@ 3.0'	TPH/Gasoline	ND	50

Date Sampled:	01/24/05	Date Analyzed:	01/25/05	QC Batch #:	5235
Date Received:	01/25/05	Method:	EPA 5030/8015M		

---



## Volatile Hydrocarbons by GC/MS in Water

Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27938	B-115-W@ 4.0'	dichlorodifluoromethane	ND	1.0
		chloromethane	ND	1.0
		vinyl chloride	ND	1.0
		chloroethane	ND	1.0
		bromomethane	ND	1.0
		trichlorofluoromethane	ND	1.0
		1,1-dichloroethene (1,1-DCE)	ND	1.0
		methylene chloride	ND	1.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	1.0
		1,1-dichloroethane (1,1-DCA)	ND	1.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	1.0
		2,2-dichloropropane	ND	1.0
		chloroform (THM1)	ND	1.0
		bromochloromethane	ND	1.0
		1,1,1-trichloroethane (TCA)	ND	1.0
		1,2-dichloroethane (EDC)	ND	1.0
		1,1-dichloropropene	ND	1.0
		carbon tetrachloride	ND	1.0
		benzene	ND	1.0
		trichloroethene (TCE)	ND	1.0
		1,2-dichloropropane (DCP)	ND	1.0
		dibromomethane	ND	1.0
		bromodichloromethane (THM2)	ND	1.0
		cis-1,3-dichloropropene	ND	1.0
		toluene	ND	1.0
		1,1,2-trichloroethane	ND	1.0
		1,3-dichloropropane	ND	1.0
		dibromochloromethane (THM3)	ND	1.0
		tetrachloroethene (PCE)	ND	1.0
		1,2-dibromoethane (EDB)	ND	1.0
		chlorobenzene	ND	1.0
		1,1,1,2-tetrachloroethane	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		styrene	ND	1.0
		o-xylene	ND	1.0
		bromoform (THM4)	ND	1.0
		1,1,2,2-tetrachloroethane	ND	1.0



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27938	B-115-W@ 4.0'	isopropyl benzene	ND	1.0
		1,2,3-trichloropropane	ND	1.0
		bromobenzene	ND	1.0
		n-propyl benzene	ND	1.0
		2-chlorotoluene	ND	1.0
		4-chlorotoluene	ND	1.0
		1,3,5-trimethylbenzene	ND	1.0
		tert-butylbenzene	ND	1.0
		1,2,4-trimethylbenzene	ND	1.0
		sec-butylbenzene	ND	1.0
		1,3-dichlorobenzene	ND	1.0
		1,4-dichlorobenzene	ND	1.0
		1,2-dichlorobenzene	ND	1.0
		p-isopropyltoluene	ND	1.0
		n-butylbenzene	ND	1.0
		1,2,4-trichlorobenzene	ND	1.0
		naphthalene	ND	1.0
		hexachlorobutadiene	ND	1.0
		1,2,3-trichlorobenzene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	ND	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.0	100	70 – 130
toluene-d <sub>8</sub> (20)	20.8	104	70 – 130
4-bromofluorobenzene (20)	20.6	103	70 – 130

Date Sampled: 01/24/05	Date Analyzed: 01/25/05	QC Batch #: 5251
Date Received: 01/25/05	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27941	B-115-W@ 21.5'	dichlorodifluoromethane	ND	10
		chloromethane	ND	10
		vinyl chloride	ND	10
		chloroethane	ND	10
		bromomethane	ND	10
		trichlorofluoromethane	ND	10
		1,1-dichloroethene (1,1-DCE)	ND	10
		methylene chloride	ND	10
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	10
		1,1-dichloroethane (1,1-DCA)	ND	10
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	10
		2,2-dichloropropane	ND	10
		chloroform (THM1)	ND	10
		bromochloromethane	ND	10
		1,1,1-trichloroethane (TCA)	ND	10
		1,2-dichloroethane (EDC)	63	10
		1,1-dichloropropene	ND	10
		carbon tetrachloride	ND	10
		benzene	1,200	10
		trichloroethene (TCE)	ND	10
		1,2-dichloropropane (DCP)	ND	10
		dibromomethane	ND	10
		bromodichloromethane (THM2)	ND	10
		cis-1,3-dichloropropene	ND	10
		toluene	11	10
		1,1,2-trichloroethane	ND	10
		1,3-dichloropropane	ND	10
		dibromochloromethane (THM3)	ND	10
		tetrachloroethene (PCE)	ND	10
		1,2-dibromoethane (EDB)	ND	10
		chlorobenzene	ND	10
		1,1,1,2-tetrachloroethane	ND	10
		ethyl benzene	46	10
		m,p-xylene	29	10
		styrene	ND	10
		o-xylene	ND	10
		bromoform (THM4)	ND	10
		1,1,2,2-tetrachloroethane	ND	10



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27941	B-115-W@ 21.5'	isopropyl benzene	ND	10
		1,2,3-trichloropropane	ND	10
		bromobenzene	ND	10
		n-propyl benzene	ND	10
		2-chlorotoluene	ND	10
		4-chlorotoluene	ND	10
		1,3,5-trimethylbenzene	17	10
		tert-butylbenzene	ND	10
		1,2,4-trimethylbenzene	12	10
		sec-butylbenzene	ND	10
		1,3-dichlorobenzene	ND	10
		1,4-dichlorobenzene	ND	10
		1,2-dichlorobenzene	ND	10
		p-isopropyltoluene	ND	10
		n-butylbenzene	ND	10
		1,2,4-trichlorobenzene	ND	10
		naphthalene	ND	10
		hexachlorobutadiene	ND	10
		1,2,3-trichlorobenzene	ND	10

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	250
methyl tert-butyl ether (MTBE)	ND	10
di-isopropyl ether (DIPE)	ND	10
ethyl tert-butyl ether (ETBE)	ND	10
tert-amyl methyl ether (TAME)	ND	10

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.0	100	70 – 130
toluene-d <sub>8</sub> (20)	20.6	103	70 – 130
4-bromofluorobenzene (20)	20.2	101	70 – 130

Date Sampled: 01/24/05	Date Analyzed: 01/26/05	QC Batch #: 5251
Date Received: 01/25/05	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27942	B-116-W@ 3.0'	dichlorodifluoromethane	ND	1.0
		chloromethane	ND	1.0
		vinyl chloride	ND	1.0
		chloroethane	ND	1.0
		bromomethane	ND	1.0
		trichlorofluoromethane	ND	1.0
		1,1-dichloroethene (1,1-DCE)	ND	1.0
		methylene chloride	ND	1.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	1.0
		1,1-dichloroethane (1,1-DCA)	ND	1.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	1.0
		2,2-dichloropropane	ND	1.0
		chloroform (THM1)	ND	1.0
		bromoform (THM2)	ND	1.0
		1,1,1-trichloroethane (TCA)	ND	1.0
		1,2-dichloroethane (EDC)	ND	1.0
		1,1-dichloropropene	ND	1.0
		carbon tetrachloride	ND	1.0
		benzene	ND	1.0
		trichloroethene (TCE)	ND	1.0
		1,2-dichloropropane (DCP)	ND	1.0
		dibromomethane	ND	1.0
		bromodichloromethane (THM3)	ND	1.0
		cis-1,3-dichloropropene	ND	1.0
		toluene	ND	1.0
		1,1,2-trichloroethane	ND	1.0
		1,3-dichloropropane	ND	1.0
		dibromochloromethane (THM4)	ND	1.0
		tetrachloroethene (PCE)	ND	1.0
		1,2-dibromoethane (EDB)	ND	1.0
		chlorobenzene	ND	1.0
		1,1,1,2-tetrachloroethane	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		styrene	ND	1.0
		o-xylene	ND	1.0
		bromoform (THM5)	ND	1.0
		1,1,2,2-tetrachloroethane	ND	1.0



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27942	B-116-W@ 3.0'	isopropyl benzene	ND	1.0
		1,2,3-trichloropropane	ND	1.0
		bromobenzene	ND	1.0
		n-propyl benzene	ND	1.0
		2-chlorotoluene	ND	1.0
		4-chlorotoluene	ND	1.0
		1,3,5-trimethylbenzene	ND	1.0
		tert-butylbenzene	ND	1.0
		1,2,4-trimethylbenzene	ND	1.0
		sec-butylbenzene	ND	1.0
		1,3-dichlorobenzene	ND	1.0
		1,4-dichlorobenzene	ND	1.0
		1,2-dichlorobenzene	ND	1.0
		p-isopropyltoluene	ND	1.0
		n-butylbenzene	ND	1.0
		1,2,4-trichlorobenzene	ND	1.0
		naphthalene	ND	1.0
		hexachlorobutadiene	ND	1.0
		1,2,3-trichlorobenzene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	ND	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.9	99.5	70 – 130
toluene-d <sub>8</sub> (20)	21.1	106	70 – 130
4-bromofluorobenzene (20)	19.8	99.0	70 – 130

Date Sampled: 01/24/05	Date Analyzed: 01/25/05	QC Batch #: 5251
Date Received: 01/25/05	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27943	B-117-W@ 3.0'	dichlorodifluoromethane	ND	1.0
		chloromethane	ND	1.0
		vinyl chloride	ND	1.0
		chloroethane	ND	1.0
		bromomethane	ND	1.0
		trichlorofluoromethane	ND	1.0
		1,1-dichloroethene (1,1-DCE)	ND	1.0
		methylene chloride	ND	1.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	1.0
		1,1-dichloroethane (1,1-DCA)	ND	1.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	1.0
		2,2-dichloropropane	ND	1.0
		chloroform (THM1)	ND	1.0
		bromochloromethane	ND	1.0
		1,1,1-trichloroethane (TCA)	ND	1.0
		1,2-dichloroethane (EDC)	ND	1.0
		1,1-dichloropropene	ND	1.0
		carbon tetrachloride	ND	1.0
		benzene	ND	1.0
		trichloroethene (TCE)	ND	1.0
		1,2-dichloropropane (DCP)	ND	1.0
		dibromomethane	ND	1.0
		bromodichloromethane (THM2)	ND	1.0
		cis-1,3-dichloropropene	ND	1.0
		toluene	1.7	1.0
		1,1,2-trichloroethane	ND	1.0
		1,3-dichloropropane	ND	1.0
		dibromochloromethane (THM3)	ND	1.0
		tetrachloroethene (PCE)	ND	1.0
		1,2-dibromoethane (EDB)	ND	1.0
		chlorobenzene	ND	1.0
		1,1,1,2-tetrachloroethane	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		styrene	ND	1.0
		o-xylene	ND	1.0
		bromoform (THM4)	ND	1.0
		1,1,2,2-tetrachloroethane	ND	1.0



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27943	B-117-W@ 3.0'	isopropyl benzene	ND	1.0
		1,2,3-trichloropropane	ND	1.0
		bromobenzene	ND	1.0
		n-propyl benzene	ND	1.0
		2-chlorotoluene	ND	1.0
		4-chlorotoluene	ND	1.0
		1,3,5-trimethylbenzene	ND	1.0
		tert-butylbenzene	ND	1.0
		1,2,4-trimethylbenzene	ND	1.0
		sec-butylbenzene	ND	1.0
		1,3-dichlorobenzene	ND	1.0
		1,4-dichlorobenzene	ND	1.0
		1,2-dichlorobenzene	ND	1.0
		p-isopropyltoluene	ND	1.0
		n-butylbenzene	ND	1.0
		1,2,4-trichlorobenzene	ND	1.0
		naphthalene	ND	1.0
		hexachlorobutadiene	ND	1.0
		1,2,3-trichlorobenzene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	ND	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.2	101	70 – 130
toluene-d <sub>8</sub> (20)	20.9	105	70 – 130
4-bromofluorobenzene (20)	20.4	102	70 – 130

Date Sampled: 01/24/05  
Date Received: 01/25/05

Date Analyzed: 01/25/05  
Method: EPA 8260B

QC Batch #: 5251



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27944	B-118-W@ 3.0'	dichlorodifluoromethane	ND	1.0
		chloromethane	ND	1.0
		vinyl chloride	ND	1.0
		chloroethane	ND	1.0
		bromomethane	ND	1.0
		trichlorofluoromethane	ND	1.0
		1,1-dichloroethene (1,1-DCE)	ND	1.0
		methylene chloride	ND	1.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	1.0
		1,1-dichloroethane (1,1-DCA)	ND	1.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	1.0
		2,2-dichloropropane	ND	1.0
		chloroform (THM1)	ND	1.0
		bromochloromethane	ND	1.0
		1,1,1-trichloroethane (TCA)	ND	1.0
		1,2-dichloroethane (EDC)	ND	1.0
		1,1-dichloropropene	ND	1.0
		carbon tetrachloride	ND	1.0
		benzene	ND	1.0
		trichloroethene (TCE)	ND	1.0
		1,2-dichloropropane (DCP)	ND	1.0
		dibromomethane	ND	1.0
		bromodichloromethane (THM2)	ND	1.0
		cis-1,3-dichloropropene	ND	1.0
		toluene	ND	1.0
		1,1,2-trichloroethane	ND	1.0
		1,3-dichloropropane	ND	1.0
		dibromochloromethane (THM3)	ND	1.0
		tetrachloroethene (PCE)	ND	1.0
		1,2-dibromoethane (EDB)	ND	1.0
		chlorobenzene	ND	1.0
		1,1,1,2-tetrachloroethane	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		styrene	ND	1.0
		o-xylene	ND	1.0
		bromoform (THM4)	ND	1.0
		1,1,2,2-tetrachloroethane	ND	1.0



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27944	B-118-W@ 3.0'	isopropyl benzene	ND	1.0
		1,2,3-trichloropropane	ND	1.0
		bromobenzene	ND	1.0
		n-propyl benzene	ND	1.0
		2-chlorotoluene	ND	1.0
		4-chlorotoluene	ND	1.0
		1,3,5-trimethylbenzene	ND	1.0
		tert-butylbenzene	ND	1.0
		1,2,4-trimethylbenzene	ND	1.0
		sec-butylbenzene	ND	1.0
		1,3-dichlorobenzene	ND	1.0
		1,4-dichlorobenzene	ND	1.0
		1,2-dichlorobenzene	ND	1.0
		p-isopropyltoluene	ND	1.0
		n-butylbenzene	ND	1.0
		1,2,4-trichlorobenzene	ND	1.0
		naphthalene	ND	1.0
		hexachlorobutadiene	ND	1.0
		1,2,3-trichlorobenzene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	ND	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.7	98.5	70 – 130
toluene-d <sub>8</sub> (20)	20.9	105	70 – 130
4-bromofluorobenzene (20)	20.3	102	70 – 130

Date Sampled: 01/24/05	Date Analyzed: 01/25/05	QC Batch #: 5251
Date Received: 01/25/05	Method: EPA 8260B	



## TPH Gasoline in Soil

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Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
27939	B-115@ 13.0'	TPH/Gasoline	ND	1.0

Date Sampled: 01/24/05	Date Analyzed: 01/25/05	QC Batch #: 5243
Date Received: 01/25/05	Method: EPA 8015M	

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Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
27940	B-115@ 20.5'	TPH/Gasoline	ND	1.0

Date Sampled: 01/24/05	Date Analyzed: 01/25/05	QC Batch #: 5243
Date Received: 01/25/05	Method: EPA 8015M	

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## Volatile Hydrocarbons by GC/MS in Soil

Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
27939	B-115@ 13.0'	dichlorodifluoromethane	ND	2.0
		chloromethane	ND	2.0
		vinyl chloride	ND	2.0
		chloroethane	ND	2.0
		bromomethane	ND	2.0
		trichlorofluoromethane	ND	2.0
		1,1-dichloroethene (1,1-DCE)	ND	2.0
		methylene chloride	ND	2.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	2.0
		1,1-dichloroethane (1,1-DCA)	ND	2.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	2.0
		2,2-dichloropropane	ND	2.0
		chloroform (THM1)	ND	2.0
		bromochloromethane	ND	2.0
		1,1,1-trichloroethane (TCA)	ND	2.0
		1,2-dichloroethane (EDC)	3.0	2.0
		1,1-dichloropropene	ND	2.0
		carbon tetrachloride	ND	2.0
		benzene	67	2.0
		trichloroethene (TCE)	ND	2.0
		1,2-dichloropropane (DCP)	ND	2.0
		dibromomethane	ND	2.0
		bromodichloromethane (THM2)	ND	2.0
		cis-1,3-dichloropropene	ND	2.0
		toluene	ND	2.0
		1,1,2-trichloroethane	ND	2.0
		1,3-dichloropropane	ND	2.0
		dibromochloromethane (THM3)	ND	2.0
		tetrachloroethene (PCE)	ND	2.0
		1,2-dibromoethane (EDB)	ND	2.0
		chlorobenzene	ND	2.0
		1,1,1,2-tetrachloroethane	ND	2.0
		ethyl benzene	4.9	2.0
		m,p-xylene	ND	2.0
		styrene	ND	2.0
		o-xylene	ND	2.0
		bromoform (THM4)	ND	2.0
		1,1,2,2-tetrachloroethane	ND	2.0



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
27939	B-115@ 13.0'	isopropyl benzene	ND	2.0
		1,2,3-trichloropropane	ND	2.0
		bromobenzene	ND	2.0
		n-propyl benzene	ND	2.0
		2-chlorotoluene	ND	2.0
		4-chlorotoluene	ND	2.0
		1,3,5-trimethylbenzene	ND	2.0
		tert-butylbenzene	ND	2.0
		1,2,4-trimethylbenzene	ND	2.0
		sec-butylbenzene	ND	2.0
		1,3-dichlorobenzene	ND	2.0
		1,4-dichlorobenzene	ND	2.0
		1,2-dichlorobenzene	ND	2.0
		p-isopropyltoluene	ND	2.0
		n-butylbenzene	ND	2.0
		1,2,4-trichlorobenzene	ND	2.0
		naphthalene	ND	2.0
		hexachlorobutadiene	ND	2.0
		1,2,3-trichlorobenzene	ND	2.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	50
methyl tert-butyl ether (MTBE)	ND	2.0
di-isopropyl ether (DIPE)	ND	2.0
ethyl tert-butyl ether (ETBE)	ND	2.0
tert-amyl methyl ether (TAME)	ND	2.0

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.4	102	70 – 130
toluene-d <sub>8</sub> (20)	19.4	97.0	70 – 130
4-bromofluorobenzene (20)	19.0	95.0	70 – 130

Date Sampled: 01/24/05	Date Analyzed: 01/25/05	QC Batch #: 5193
Date Received: 01/25/05	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
27940	B-115@ 20.5'	dichlorodifluoromethane	ND	2.0
		chloromethane	ND	2.0
		vinyl chloride	ND	2.0
		chloroethane	ND	2.0
		bromomethane	ND	2.0
		trichlorofluoromethane	ND	2.0
		1,1-dichloroethene (1,1-DCE)	ND	2.0
		methylene chloride	ND	2.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	2.0
		1,1-dichloroethane (1,1-DCA)	ND	2.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	2.0
		2,2-dichloropropane	ND	2.0
		chloroform (THM1)	ND	2.0
		bromoform (THM2)	ND	2.0
		1,1,1-trichloroethane (TCA)	ND	2.0
		1,2-dichloroethane (EDC)	ND	2.0
		1,1-dichloropropene	ND	2.0
		carbon tetrachloride	ND	2.0
		benzene	ND	2.0
		trichloroethene (TCE)	ND	2.0
		1,2-dichloropropane (DCP)	ND	2.0
		dibromomethane	ND	2.0
		bromodichloromethane (THM3)	ND	2.0
		cis-1,3-dichloropropene	ND	2.0
		toluene	ND	2.0
		1,1,2-trichloroethane	ND	2.0
		1,3-dichloropropane	ND	2.0
		dibromochloromethane (THM4)	ND	2.0
		tetrachloroethene (PCE)	ND	2.0
		1,2-dibromoethane (EDB)	ND	2.0
		chlorobenzene	ND	2.0
		1,1,1,2-tetrachloroethane	ND	2.0
		ethyl benzene	ND	2.0
		m,p-xylene	ND	2.0
		styrene	ND	2.0
		o-xylene	ND	2.0
		bromoform (THM5)	ND	2.0
		1,1,2,2-tetrachloroethane	ND	2.0



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
27940	B-115@ 20.5'	isopropyl benzene	ND	2.0
		1,2,3-trichloropropane	ND	2.0
		bromobenzene	ND	2.0
		n-propyl benzene	ND	2.0
		2-chlorotoluene	ND	2.0
		4-chlorotoluene	ND	2.0
		1,3,5-trimethylbenzene	ND	2.0
		tert-butylbenzene	ND	2.0
		1,2,4-trimethylbenzene	ND	2.0
		sec-butylbenzene	ND	2.0
		1,3-dichlorobenzene	ND	2.0
		1,4-dichlorobenzene	ND	2.0
		1,2-dichlorobenzene	ND	2.0
		p-isopropyltoluene	ND	2.0
		n-butylbenzene	ND	2.0
		1,2,4-trichlorobenzene	ND	2.0
		naphthalene	ND	2.0
		hexachlorobutadiene	ND	2.0
		1,2,3-trichlorobenzene	ND	2.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	50
methyl tert-butyl ether (MTBE)	ND	2.0
di-isopropyl ether (DIPE)	ND	2.0
ethyl tert-butyl ether (ETBE)	ND	2.0
tert-amyl methyl ether (TAME)	ND	2.0

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.5	103	70 – 130
toluene-d <sub>8</sub> (20)	19.4	97.0	70 – 130
4-bromofluorobenzene (20)	19.1	95.5	70 – 130

Date Sampled: 01/24/05	Date Analyzed: 01/25/05	QC Batch #: 5193
Date Received: 01/25/05	Method: EPA 8260B	



# LABORATORY

## QUALITY ASSURANCE REPORT

QC Batch #: 5235

Lab Project #: 5012501

Sample ID	Compound	Result (ug/L)
MB	TPH/Gas	ND
MB	MTBE	ND
MB	Benzene	ND
MB	Toluene	ND
MB	Ethyl Benzene	ND
MB	Xylenes	ND

Sample #	Sample ID	Compound	Result (ug/L)	Spike Level	% Recv.
27877	CMS	TPH/Gas		NS	
	CMS	Benzene	10.2	10.0	102
	CMS	Toluene	10.4	10.0	104
	CMS	Ethyl Benzene	10.2	10.0	102
	CMS	Xylenes	30.4	30.0	102

Sample #	Sample ID	Compound	Result (ug/L)	Spike Level	% Recv.	RPD
27877	CMSD	TPH/Gas		NS		
	CMSD	Benzene	10.4	10.0	104	1.9
	CMSD	Toluene	10.6	10.0	106	1.4
	CMSD	Ethyl Benzene	10.5	10.0	105	2.0
	CMSD	Xylenes	31.5	30.0	105	3.7

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery



QC Batch #: 5251

Lab Project #: 5012501

Sample ID	Compound Name	Result (ug/L)
MB	1,1-dichloroethene	ND
MB	benzene	ND
MB	trichloroethene	ND
MB	toluene	ND
MB	chlorobenzene	ND

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.6	98.0	70 – 130
toluene-d <sub>8</sub> (20)	20.1	100	70 – 130
4-bromofluorobenzene (20)	20.5	103	70 – 130

Sample #	Sample ID	Compound Name	Result (ug/L)	Spike Level	% Recv.
27916	CMS	1,1-dichloroethene	27.9	25.0	112
	CMS	benzene	26.6	25.0	106
	CMS	trichloroethene	23.2	25.0	92.8
	CMS	toluene	25.7	25.0	103
	CMS	chlorobenzene	26.2	25.0	105

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.3	102	70 – 130
toluene-d <sub>8</sub> (20)	19.6	98.0	70 – 130
4-bromofluorobenzene (20)	18.9	94.5	70 – 130



Sample #	Sample ID	Compound Name	Result (ug/L)	Spike Level	% Recv.	RPD
27916	CMSD	1,1-dichloroethene	27.2	25.0	109	2.5
	CMSD	benzene	25.8	25.0	103	3.1
	CMSD	trichloroethene	22.7	25.0	90.8	2.2
	CMSD	toluene	25.0	25.0	100	2.8
	CMSD	chlorobenzene	25.7	25.0	103	1.9

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.5	103	70 – 130
toluene-d <sub>8</sub> (20)	19.6	98.0	70 – 130
4-bromofluorobenzene (20)	19.5	97.5	70 – 130

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery

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QC Batch #: 5264

Lab Project #: 5012501

Sample ID	Compound	Result (mg/kg)
MB	TPH/Gas	ND
MB	MTBE	ND
MB	Benzene	ND
MB	Toluene	ND
MB	Ethyl Benzene	ND
MB	Xylenes	ND

Sample #	Sample ID	Compound	Result (mg/kg)	Spike Level	% Recv.
27867	CMS	TPH/Gas		NS	
	CMS	Benzene	0.088	0.100	88.0
	CMS	Toluene	0.089	0.100	89.0
	CMS	Ethyl Benzene	0.088	0.100	88.4
	CMS	Xylenes	0.265	0.300	88.4

Sample #	Sample ID	Compound	Result (mg/kg)	Spike Level	% Recv.	RPD
27867	CMSD	TPH/Gas		NS		
	CMSD	Benzene	0.096	0.100	96.3	9.0
	CMSD	Toluene	0.095	0.100	94.5	5.6
	CMSD	Ethyl Benzene	0.092	0.100	91.6	3.6
	CMSD	Xylenes	0.272	0.300	90.7	2.5

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery



QC Batch #: 5193

Lab Project #: 5012501

Sample ID	Compound Name	Result (ug/kg)
MB	1,1-dichloroethene	ND
MB	benzene	ND
MB	trichloroethene	ND
MB	toluene	ND
MB	chlorobenzene	ND

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	21.1	106	70 – 130
toluene-d <sub>8</sub> (20)	19.8	99.0	70 – 130
4-bromofluorobenzene (20)	19.8	99.0	70 – 130

Sample ID	Compound Name	Result (ug/kg)	Spike Level	% Recv.
LCS	1,1-dichloroethene	22.4	25.0	89.6
LCS	benzene	23.7	25.0	94.8
LCS	trichloroethene	20.0	25.0	80.0
LCS	toluene	22.4	25.0	89.6
LCS	chlorobenzene	24.5	25.0	98.0

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.0	100	70 – 130
toluene-d <sub>8</sub> (20)	19.0	95.0	70 – 130
4-bromofluorobenzene (20)	207	104	70 – 130



Sample ID	Compound Name	Result (ug/kg)	Spike Level	% Recv.	RPD
LCSD	1,1-dichloroethene	20.3	25.0	81.2	9.8
LCSD	benzene	21.9	25.0	87.6	7.9
LCSD	trichloroethene	18.6	25.0	74.4	7.3
LCSD	toluene	20.9	25.0	83.6	6.9
LCSD	chlorobenzene	23.0	25.0	92.0	6.3

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.2	101	70 – 130
toluene-d <sub>8</sub> (20)	19.0	95.0	70 – 130
4-bromofluorobenzene (20)	19.7	98.5	70 – 130

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; No Recovery

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# Analytical Sciences

## CHAIN OF CUSTODY

Analytical Sciences  
P.O. Box 750336, Petaluma, CA 94975-0336  
110 Liberty Street, Petaluma, CA 94952  
(707) 769-3128



CLIENT INFORMATION		SAMPLE INFORMATION	
COMPANY NAME: SCS ENGINEERS	CONTACT: John Riddell	COMPANY NAME: 1100 Nessel Rd	
ADDRESS: 3845 WESTWIND BOULEVARD		ADDRESS: Sebastopol CA	
SANTA ROSA, CA 95403		95472	
CONTACT: Stephen Knuttel		PHONE#: (707) 823-1976	
PHONE#: (707) 546-9461		FAX#:	(707) 544-5769

LAB PROJECT NUMBER:	5012501
SCS ENGINEERS PROJECT NAME:	Nessel Road
SCS ENGINEERS PROJECT NUMBER:	0120331700
MOBILE LAB	<input checked="" type="checkbox"/>
SECOND TIME CHARGE	<input checked="" type="checkbox"/>
GEOTRACKER EDI: X Y N	
GLOBAL ID: 1609700318	
COOLER TEMPERATURE	
COOLER TEMPERATURE °C	
COC	

ITEM	CLIENT SAMPLE I.D.	DATE SAMPLED	TIME	MATRIX	#	PRESV. YES/NO	CONT.	LAB SAMPLE #	COMMENTS
1	B-15-w@ 4.0'	2/1/04	1025	w	4	X			27936
2	B-15@ 13.5'			1100	Soil		1		
3	B-15@ 20.5'			1200	Soil		1		27939
4	B-15-w@ 21.5'			1245	water	4			27940
5	B-16-w@ 3.0'			1525		4			27941
6	B-17-w@ 3.0'			1530		4			27942
7	B-18-w@ 3.0'			1630		4			27943
8									27944
9									
10									
11									

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY LABORATORY:
RECEIVED BY:			
RELINQUISHED BY:			
RECEIVED BY:			

PAGE 1 of 1

1/25/05 8:35 DATE TIME



Report Date: February 14, 2005

Stephen Knuttel  
SCS Engineers  
3645 Westwind Blvd.  
Santa Rosa, CA 95403

## **LABORATORY REPORT**

Project Name: **Hessel Rd.** **01203317.00**

Lab Project Number: **5012603**

This 21 page report of analytical data has been reviewed and approved for release.

Mark A. Valentini, Ph.D.  
Laboratory Director



### TPH Gasoline in Water

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
27978	B-116-W@ 20.0'	TPH/Gasoline	360	50

Date Sampled:	01/25/05	Date Analyzed:	01/26/05	QC Batch #:	5264
Date Received:	01/26/05	Method:	EPA 5030/8015M		

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
27981	B-116-W@ 40.0'	TPH/Gasoline	ND	50

Date Sampled:	01/25/05	Date Analyzed:	01/26/05	QC Batch #:	5264
Date Received:	01/26/05	Method:	EPA 5030/8015M		

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
27982	B-117-W@ 20.0'	TPH/Gasoline	130	50

Date Sampled:	01/25/05	Date Analyzed:	01/26/05	QC Batch #:	5264
Date Received:	01/26/05	Method:	EPA 5030/8015M		

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
27983	B-117-W@ 40.0'	TPH/Gasoline	110	50

Date Sampled:	01/25/05	Date Analyzed:	01/26/05	QC Batch #:	5264
Date Received:	01/26/05	Method:	EPA 5030/8015M		



## Volatile Hydrocarbons by GC/MS in Water

Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27978	B-116-W@ 20.0'	dichlorodifluoromethane	ND	1.0
		chloromethane	ND	1.0
		vinyl chloride	ND	1.0
		chloroethane	ND	1.0
		bromomethane	ND	1.0
		trichlorofluoromethane	ND	1.0
		1,1-dichloroethene (1,1-DCE)	ND	1.0
		methylene chloride	ND	1.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	1.0
		1,1-dichloroethane (1,1-DCA)	ND	1.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	1.0
		2,2-dichloropropane	ND	1.0
		chloroform (THM1)	ND	1.0
		bromochloromethane	ND	1.0
		1,1,1-trichloroethane (TCA)	ND	1.0
		1,2-dichloroethane (EDC)	10	1.0
		1,1-dichloropropene	ND	1.0
		carbon tetrachloride	ND	1.0
		benzene	2.2	1.0
		trichloroethene (TCE)	ND	1.0
		1,2-dichloropropane (DCP)	ND	1.0
		dibromomethane	ND	1.0
		bromodichloromethane (THM2)	ND	1.0
		cis-1,3-dichloropropene	ND	1.0
		toluene	ND	1.0
		1,1,2-trichloroethane	ND	1.0
		1,3-dichloropropane	ND	1.0
		dibromochloromethane (THM3)	ND	1.0
		tetrachloroethene (PCE)	ND	1.0
		1,2-dibromoethane (EDB)	ND	1.0
		chlorobenzene	ND	1.0
		1,1,1,2-tetrachloroethane	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		styrene	ND	1.0
		o-xylene	ND	1.0
		bromoform (THM4)	ND	1.0
		1,1,2,2-tetrachloroethane	ND	1.0



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27978	B-116-W@ 20.0'	isopropyl benzene	ND	1.0
		1,2,3-trichloropropane	ND	1.0
		bromobenzene	ND	1.0
		n-propyl benzene	ND	1.0
		2-chlorotoluene	ND	1.0
		4-chlorotoluene	ND	1.0
		1,3,5-trimethylbenzene	2.0	1.0
		tert-butylbenzene	ND	1.0
		1,2,4-trimethylbenzene	ND	1.0
		sec-butylbenzene	ND	1.0
		1,3-dichlorobenzene	ND	1.0
		1,4-dichlorobenzene	ND	1.0
		1,2-dichlorobenzene	ND	1.0
		p-isopropyltoluene	ND	1.0
		n-butylbenzene	ND	1.0
		1,2,4-trichlorobenzene	ND	1.0
		naphthalene	ND	1.0
		hexachlorobutadiene	ND	1.0
		1,2,3-trichlorobenzene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	44	25
methyl tert-butyl ether (MTBE)	ND	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.9	105	70 – 130
toluene-d <sub>8</sub> (20)	19.0	95.0	70 – 130
4-bromofluorobenzene (20)	19.8	99.0	70 – 130

Date Sampled: 01/25/05	Date Analyzed: 01/28/05	QC Batch #: 5272
Date Received: 01/26/05	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27981	B-116-W@ 40.0'	dichlorodifluoromethane	ND	1.0
		chloromethane	ND	1.0
		vinyl chloride	ND	1.0
		chloroethane	ND	1.0
		bromomethane	ND	1.0
		trichlorofluoromethane	ND	1.0
		1,1-dichloroethene (1,1-DCE)	ND	1.0
		methylene chloride	ND	1.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	1.0
		1,1-dichloroethane (1,1-DCA)	ND	1.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	1.0
		2,2-dichloropropane	ND	1.0
		chloroform (THM1)	ND	1.0
		bromochloromethane	ND	1.0
		1,1,1-trichloroethane (TCA)	ND	1.0
		1,2-dichloroethane (EDC)	ND	1.0
		1,1-dichloropropene	ND	1.0
		carbon tetrachloride	ND	1.0
		benzene	ND	1.0
		trichloroethene (TCE)	ND	1.0
		1,2-dichloropropane (DCP)	ND	1.0
		dibromomethane	ND	1.0
		bromodichloromethane (THM2)	ND	1.0
		cis-1,3-dichloropropene	ND	1.0
		toluene	ND	1.0
		1,1,2-trichloroethane	ND	1.0
		1,3-dichloropropane	ND	1.0
		dibromochloromethane (THM3)	ND	1.0
		tetrachloroethene (PCE)	ND	1.0
		1,2-dibromoethane (EDB)	ND	1.0
		chlorobenzene	ND	1.0
		1,1,1,2-tetrachloroethane	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		styrene	ND	1.0
		o-xylene	ND	1.0
		bromoform (THM4)	ND	1.0
		1,1,2,2-tetrachloroethane	ND	1.0



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27981	B-116-W@ 40.0'	isopropyl benzene	ND	1.0
		1,2,3-trichloropropane	ND	1.0
		bromobenzene	ND	1.0
		n-propyl benzene	ND	1.0
		2-chlorotoluene	ND	1.0
		4-chlorotoluene	ND	1.0
		1,3,5-trimethylbenzene	ND	1.0
		tert-butylbenzene	ND	1.0
		1,2,4-trimethylbenzene	ND	1.0
		sec-butylbenzene	ND	1.0
		1,3-dichlorobenzene	ND	1.0
		1,4-dichlorobenzene	ND	1.0
		1,2-dichlorobenzene	ND	1.0
		p-isopropyltoluene	ND	1.0
		n-butylbenzene	ND	1.0
		1,2,4-trichlorobenzene	ND	1.0
		naphthalene	ND	1.0
		hexachlorobutadiene	ND	1.0
		1,2,3-trichlorobenzene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	ND	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.7	104	70 – 130
toluene-d <sub>8</sub> (20)	19.1	95.5	70 – 130
4-bromofluorobenzene (20)	19.4	97.0	70 – 130

Date Sampled: 01/25/05  
Date Received: 01/26/05

Date Analyzed: 01/28/05  
Method: EPA 8260B

QC Batch #: 5272



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27982	B-117-W@ 20.0'	dichlorodifluoromethane	ND	1.0
		chloromethane	ND	1.0
		vinyl chloride	ND	1.0
		chloroethane	ND	1.0
		bromomethane	ND	1.0
		trichlorofluoromethane	ND	1.0
		1,1-dichloroethene (1,1-DCE)	ND	1.0
		methylene chloride	ND	1.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	1.0
		1,1-dichloroethane (1,1-DCA)	ND	1.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	1.0
		2,2-dichloropropane	ND	1.0
		chloroform (THM1)	ND	1.0
		bromochloromethane	ND	1.0
		1,1,1-trichloroethane (TCA)	ND	1.0
		1,2-dichloroethane (EDC)	4.8	1.0
		1,1-dichloropropene	ND	1.0
		carbon tetrachloride	ND	1.0
		benzene	ND	1.0
		trichloroethene (TCE)	ND	1.0
		1,2-dichloropropane (DCP)	ND	1.0
		dibromomethane	ND	1.0
		bromodichloromethane (THM2)	ND	1.0
		cis-1,3-dichloropropene	ND	1.0
		toluene	ND	1.0
		1,1,2-trichloroethane	ND	1.0
		1,3-dichloropropane	ND	1.0
		dibromochloromethane (THM3)	ND	1.0
		tetrachloroethene (PCE)	ND	1.0
		1,2-dibromoethane (EDB)	ND	1.0
		chlorobenzene	ND	1.0
		1,1,1,2-tetrachloroethane	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		styrene	ND	1.0
		o-xylene	ND	1.0
		bromoform (THM4)	ND	1.0
		1,1,2,2-tetrachloroethane	ND	1.0



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27982	B-117-W@ 20.0'	isopropyl benzene	ND	1.0
		1,2,3-trichloropropane	ND	1.0
		bromobenzene	ND	1.0
		n-propyl benzene	ND	1.0
		2-chlorotoluene	ND	1.0
		4-chlorotoluene	ND	1.0
		1,3,5-trimethylbenzene	ND	1.0
		tert-butylbenzene	ND	1.0
		1,2,4-trimethylbenzene	ND	1.0
		sec-butylbenzene	ND	1.0
		1,3-dichlorobenzene	ND	1.0
		1,4-dichlorobenzene	ND	1.0
		1,2-dichlorobenzene	ND	1.0
		p-isopropyltoluene	ND	1.0
		n-butylbenzene	ND	1.0
		1,2,4-trichlorobenzene	ND	1.0
		naphthalene	ND	1.0
		hexachlorobutadiene	ND	1.0
		1,2,3-trichlorobenzene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	ND	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.9	105	70 – 130
toluene-d <sub>8</sub> (20)	19.1	95.5	70 – 130
4-bromofluorobenzene (20)	19.6	98.0	70 – 130

Date Sampled: 01/25/05	Date Analyzed: 01/28/05	QC Batch #: 5272
Date Received: 01/26/05	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27983	B-117-W@ 40.0'	dichlorodifluoromethane	ND	1.0
		chloromethane	ND	1.0
		vinyl chloride	ND	1.0
		chloroethane	ND	1.0
		bromomethane	ND	1.0
		trichlorofluoromethane	ND	1.0
		1,1-dichloroethene (1,1-DCE)	ND	1.0
		methylene chloride	ND	1.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	1.0
		1,1-dichloroethane (1,1-DCA)	ND	1.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	1.0
		2,2-dichloropropane	ND	1.0
		chloroform (THM1)	ND	1.0
		bromochloromethane	ND	1.0
		1,1,1-trichloroethane (TCA)	ND	1.0
		1,2-dichloroethane (EDC)	ND	1.0
		1,1-dichloropropene	ND	1.0
		carbon tetrachloride	ND	1.0
		benzene	ND	1.0
		trichloroethene (TCE)	ND	1.0
		1,2-dichloropropane (DCP)	ND	1.0
		dibromomethane	ND	1.0
		bromodichloromethane (THM2)	ND	1.0
		cis-1,3-dichloropropene	ND	1.0
		toluene	ND	1.0
		1,1,2-trichloroethane	ND	1.0
		1,3-dichloropropane	ND	1.0
		dibromochloromethane (THM3)	ND	1.0
		tetrachloroethene (PCE)	ND	1.0
		1,2-dibromoethane (EDB)	ND	1.0
		chlorobenzene	ND	1.0
		1,1,1,2-tetrachloroethane	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		styrene	ND	1.0
		o-xylene	ND	1.0
		bromoform (THM4)	ND	1.0
		1,1,2,2-tetrachloroethane	ND	1.0



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
27983	B-117-W@ 40.0'	isopropyl benzene	ND	1.0
		1,2,3-trichloropropane	ND	1.0
		bromobenzene	ND	1.0
		n-propyl benzene	ND	1.0
		2-chlorotoluene	ND	1.0
		4-chlorotoluene	ND	1.0
		1,3,5-trimethylbenzene	ND	1.0
		tert-butylbenzene	ND	1.0
		1,2,4-trimethylbenzene	ND	1.0
		sec-butylbenzene	ND	1.0
		1,3-dichlorobenzene	ND	1.0
		1,4-dichlorobenzene	ND	1.0
		1,2-dichlorobenzene	ND	1.0
		p-isopropyltoluene	ND	1.0
		n-butylbenzene	ND	1.0
		1,2,4-trichlorobenzene	ND	1.0
		naphthalene	ND	1.0
		hexachlorobutadiene	ND	1.0
		1,2,3-trichlorobenzene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	ND	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.8	104	70 – 130
toluene-d <sub>8</sub> (20)	19.3	96.5	70 – 130
4-bromofluorobenzene (20)	19.6	98.0	70 – 130

Date Sampled: 01/25/05  
Date Received: 01/26/05

Date Analyzed: 01/28/05  
Method: EPA 8260B

QC Batch #: 5272



## TPH Gasoline in Soil

Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
27979	B-116@ 25.5'	TPH/Gasoline	ND	1.0

Date Sampled: 01/25/05	Date Analyzed: 01/27/05	QC Batch #: 5258
Date Received: 01/26/05	Method: EPA 8015M	

Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
27980	B-116@ 35.5'	TPH/Gasoline	ND	1.0

Date Sampled: 01/25/05	Date Analyzed: 01/27/05	QC Batch #: 5258
Date Received: 01/26/05	Method: EPA 8015M	



## Volatile Hydrocarbons by GC/MS in Soil

Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
27979	B-116@ 25.5'	dichlorodifluoromethane	ND	2.0
		chloromethane	ND	2.0
		vinyl chloride	ND	2.0
		chloroethane	ND	2.0
		bromomethane	ND	2.0
		trichlorofluoromethane	ND	2.0
		1,1-dichloroethene (1,1-DCE)	ND	2.0
		methylene chloride	ND	2.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	2.0
		1,1-dichloroethane (1,1-DCA)	ND	2.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	2.0
		2,2-dichloropropane	ND	2.0
		chloroform (THM1)	ND	2.0
		bromoform (THM2)	ND	2.0
		1,1,1-trichloroethane (TCA)	ND	2.0
		1,2-dichloroethane (EDC)	9.6	2.0
		1,1-dichloropropene	ND	2.0
		carbon tetrachloride	ND	2.0
		benzene	97	2.0
		trichloroethene (TCE)	ND	2.0
		1,2-dichloropropane (DCP)	ND	2.0
		dibromomethane	ND	2.0
		bromodichloromethane (THM2)	ND	2.0
		cis-1,3-dichloropropene	ND	2.0
		toluene	ND	2.0
		1,1,2-trichloroethane	ND	2.0
		1,3-dichloropropane	ND	2.0
		dibromochloromethane (THM3)	ND	2.0
		tetrachloroethene (PCE)	ND	2.0
		1,2-dibromoethane (EDB)	ND	2.0
		chlorobenzene	ND	2.0
		1,1,1,2-tetrachloroethane	ND	2.0
		ethyl benzene	11	2.0
		m,p-xylene	ND	2.0
		styrene	ND	2.0
		o-xylene	ND	2.0
		bromoform (THM4)	ND	2.0
		1,1,2,2-tetrachloroethane	ND	2.0



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
27979	B-116@ 25.5'	isopropyl benzene	ND	2.0
		1,2,3-trichloropropane	ND	2.0
		bromobenzene	ND	2.0
		n-propyl benzene	ND	2.0
		2-chlorotoluene	ND	2.0
		4-chlorotoluene	ND	2.0
		1,3,5-trimethylbenzene	ND	2.0
		tert-butylbenzene	ND	2.0
		1,2,4-trimethylbenzene	ND	2.0
		sec-butylbenzene	ND	2.0
		1,3-dichlorobenzene	ND	2.0
		1,4-dichlorobenzene	ND	2.0
		1,2-dichlorobenzene	ND	2.0
		p-isopropyltoluene	ND	2.0
		n-butylbenzene	ND	2.0
		1,2,4-trichlorobenzene	ND	2.0
		naphthalene	ND	2.0
		hexachlorobutadiene	ND	2.0
		1,2,3-trichlorobenzene	ND	2.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	50
methyl tert-butyl ether (MTBE)	ND	2.0
di-isopropyl ether (DIPE)	ND	2.0
ethyl tert-butyl ether (ETBE)	ND	2.0
tert-amyl methyl ether (TAME)	ND	2.0

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.7	104	70 – 130
toluene-d <sub>8</sub> (20)	18.9	94.5	70 – 130
4-bromofluorobenzene (20)	19.5	97.5	70 – 130

Date Sampled: 01/25/05	Date Analyzed: 01/29/05	QC Batch #: 5250
Date Received: 01/26/05	Method: EPA 5035/8260B	



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
27980	B-116@ 35.5'	dichlorodifluoromethane	ND	2.0
		chloromethane	ND	2.0
		vinyl chloride	ND	2.0
		chloroethane	ND	2.0
		bromomethane	ND	2.0
		trichlorofluoromethane	ND	2.0
		1,1-dichloroethene (1,1-DCE)	ND	2.0
		methylene chloride	ND	2.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	2.0
		1,1-dichloroethane (1,1-DCA)	ND	2.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	2.0
		2,2-dichloropropane	ND	2.0
		chloroform (THM1)	ND	2.0
		bromoform (THM2)	ND	2.0
		1,1,1-trichloroethane (TCA)	ND	2.0
		1,2-dichloroethane (EDC)	ND	2.0
		1,1-dichloropropene	ND	2.0
		carbon tetrachloride	ND	2.0
		benzene	ND	2.0
		trichloroethene (TCE)	ND	2.0
		1,2-dichloropropane (DCP)	ND	2.0
		dibromomethane	ND	2.0
		bromodichloromethane (THM3)	ND	2.0
		cis-1,3-dichloropropene	ND	2.0
		toluene	ND	2.0
		1,1,2-trichloroethane	ND	2.0
		1,3-dichloropropane	ND	2.0
		dibromochloromethane (THM4)	ND	2.0
		tetrachloroethene (PCE)	ND	2.0
		1,2-dibromoethane (EDB)	ND	2.0
		chlorobenzene	ND	2.0
		1,1,1,2-tetrachloroethane	ND	2.0
		ethyl benzene	ND	2.0
		m,p-xylene	ND	2.0
		styrene	ND	2.0
		o-xylene	ND	2.0
		bromoform (THM5)	ND	2.0
		1,1,2,2-tetrachloroethane	ND	2.0



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
27980	B-116@ 35.5'	isopropyl benzene	ND	2.0
		1,2,3-trichloropropane	ND	2.0
		bromobenzene	ND	2.0
		n-propyl benzene	ND	2.0
		2-chlorotoluene	ND	2.0
		4-chlorotoluene	ND	2.0
		1,3,5-trimethylbenzene	ND	2.0
		tert-butylbenzene	ND	2.0
		1,2,4-trimethylbenzene	ND	2.0
		sec-butylbenzene	ND	2.0
		1,3-dichlorobenzene	ND	2.0
		1,4-dichlorobenzene	ND	2.0
		1,2-dichlorobenzene	ND	2.0
		p-isopropyltoluene	ND	2.0
		n-butylbenzene	ND	2.0
		1,2,4-trichlorobenzene	ND	2.0
		naphthalene	ND	2.0
		hexachlorobutadiene	ND	2.0
		1,2,3-trichlorobenzene	ND	2.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	50
methyl tert-butyl ether (MTBE)	ND	2.0
di-isopropyl ether (DIPE)	ND	2.0
ethyl tert-butyl ether (ETBE)	ND	2.0
tert-amyl methyl ether (TAME)	ND	2.0

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.8	104	70 – 130
toluene-d <sub>8</sub> (20)	19.0	95.0	70 – 130
4-bromofluorobenzene (20)	19.5	97.5	70 – 130

Date Sampled: 01/25/05	Date Analyzed: 01/29/05	QC Batch #: 5250
Date Received: 01/26/05	Method: EPA 5035/8260B	



# LABORATORY

## QUALITY ASSURANCE REPORT

QC Batch #: 5264

Lab Project #: 5012603

Sample ID	Compound	Result (ug/L)
MB	TPH/Gas	ND
MB	MTBE	ND
MB	Benzene	ND
MB	Toluene	ND
MB	Ethyl Benzene	ND
MB	Xylenes	ND

Sample #	Sample ID	Compound	Result (ug/L)	Spike Level	% Recv.
27978	CMS	TPH/Gas		NS	
	CMS	Benzene	9.83	10.0	98.3
	CMS	Toluene	9.47	10.0	94.7
	CMS	Ethyl Benzene	10.2	10.0	102
	CMS	Xylenes	31.3	30.0	104

Sample #	Sample ID	Compound	Result (ug/L)	Spike Level	% Recv.	RPD
27978	CMSD	TPH/Gas		NS		
	CMSD	Benzene	9.57	10.0	95.7	2.6
	CMSD	Toluene	9.19	10.0	91.9	3.0
	CMSD	Ethyl Benzene	9.61	10.0	96.1	5.9
	CMSD	Xylenes	30.0	30.0	100	4.2

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery



QC Batch #: 5272

Lab Project #: 5012603

Sample ID	Compound Name	Result (ug/L)
MB	1,1-dichloroethene	ND
MB	benzene	ND
MB	trichloroethene	ND
MB	toluene	ND
MB	chlorobenzene	ND

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.8	104	70 – 130
toluene-d <sub>8</sub> (20)	19.4	97.0	70 – 130
4-bromofluorobenzene (20)	19.9	99.5	70 – 130

Sample #	Sample ID	Compound Name	Result (ug/L)	Spike Level	% Recv.
27978	CMS	1,1-dichloroethene	29.3	25.0	117
	CMS	benzene	28.9	25.0	107
	CMS	trichloroethene	23.0	25.0	92.0
	CMS	toluene	25.8	25.0	103
	CMS	chlorobenzene	26.6	25.0	106

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.5	103	70 – 130
toluene-d <sub>8</sub> (20)	19.2	96.0	70 – 130
4-bromofluorobenzene (20)	19.3	96.5	70 – 130



Sample #	Sample ID	Compound Name	Result (ug/L)	Spike Level	% Recv.	RPD
27978	CMSD	1,1-dichloroethene	27.4	25.0	110	6.7
	CMSD	benzene	27.4	25.0	101	5.8
	CMSD	trichloroethene	21.8	25.0	87.2	5.4
	CMSD	toluene	24.6	25.0	98.4	4.8
	CMSD	chlorobenzene	25.1	25.0	100	5.8

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.6	103	70 – 130
toluene-d <sub>8</sub> (20)	19.6	98.0	70 – 130
4-bromofluorobenzene (20)	19.4	97.0	70 – 130

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery

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QC Batch #: 5258

Lab Project #: 5012603

Sample ID	Compound	Result (mg/kg)
MB	TPH/Gas	ND
MB	MTBE	ND
MB	Benzene	ND
MB	Toluene	ND
MB	Ethyl Benzene	ND
MB	Xylenes	ND

Sample ID	Compound	Result (mg/kg)	Spike Level	% Recv.
LCS	TPH/Gas		NS	
LCS	Benzene	0.096	0.100	95.8
LCS	Toluene	0.098	0.100	97.8
LCS	Ethyl Benzene	0.101	0.100	101
LCS	Xylenes	0.316	0.300	105

Sample ID	Compound	Result (mg/kg)	Spike Level	% Recv.	RPD
LCSD	TPH/Gas		NS		
LCSD	Benzene	0.096	0.100	95.8	0.07
LCSD	Toluene	0.097	0.100	97.4	0.34
LCSD	Ethyl Benzene	0.101	0.100	101	0.76
LCSD	Xylenes	0.313	0.300	104	0.95

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery



QC Batch #: 5250

Lab Project #: 5012603

Sample ID	Compound Name	Result (ug/kg)
MB	1,1-dichloroethene	ND
MB	benzene	ND
MB	trichloroethene	ND
MB	toluene	ND
MB	chlorobenzene	ND

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.4	102	70 – 130
toluene-d <sub>8</sub> (20)	19.7	98.5	70 – 130
4-bromofluorobenzene (20)	19.4	97.0	70 – 130

Sample ID	Compound Name	Result (ug/kg)	Spike Level	% Recv.
LCS	1,1-dichloroethene	28.5	25.0	114
LCS	benzene	27.3	25.0	109
LCS	trichloroethene	23.9	25.0	95.6
LCS	toluene	26.6	25.0	106
LCS	chlorobenzene	26.4	25.0	106

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.3	102	70 – 130
toluene-d <sub>8</sub> (20)	19.8	99.0	70 – 130
4-bromofluorobenzene (20)	19.1	95.5	70 – 130



Sample ID	Compound Name	Result (ug/kg)	Spike Level	% Recv.	RPD
LCSD	1,1-dichloroethene	28.0	25.0	112	1.8
LCSD	benzene	26.6	25.0	106	2.6
LCSD	trichloroethene	23.4	25.0	93.6	2.1
LCSD	toluene	25.8	25.0	103	3.1
LCSD	chlorobenzene	25.7	25.0	103	2.7

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.2	101	70 – 130
toluene-d <sub>8</sub> (20)	19.8	99.0	70 – 130
4-bromofluorobenzene (20)	19.2	96.0	70 – 130

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; No Recovery

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# *CHAIN OF CUSTODY*

**Analytical Sciences**  
P.O. Box 750336, Petaluma, CA 94975-0336  
110 Liberty Street, Petaluma, CA 94952  
(707) 769-3128

CLIENT INFORMATION		BILLING INFORMATION		
COMPANY NAME:	SCS ENGINEERS	CONTACT:	John Riddell	
ADDRESS:	<u>3645 WESTWIND BOULEVARD</u>	COMPANY NAME:	<u>14000 Nessel Rd</u>	
	<u>SANTA ROSA, CA 95403</u>	ADDRESS:	<u>Sebastopol CA</u>	
CONTACT:	Stephen Knutel	95472	PHONE#:	<u>(707) 823-1976</u>
PHONE#:	<u>(707) 546-9461</u>	FAX #:	<u>FAX #:</u>	
FAX #:	<u>(707) 544-5769</u>			

LAB PROJECT NUMBER:	5012603		
SCS ENGINEERS PROJECT NAME:	Hessel Road		
SCS ENGINEERS PROJECT NUMBER:	01203317.00		
<b>TURNAROUND TIME</b> (Check one)			
MOBILE LAB			
SAME DAY	24 HOURS	COOLER TEMPERATURE	
48 HOURS	72 HOURS	_____ °C	
5 DAYS	NORMAL	<input checked="" type="checkbox"/>	
GLOBAL ID: T00970038			
GEOTRACKER EDF:	Xy	N	

ITEM	CLIENT SAMPLE I.D.	DATE SAMPLED	TIME	MATRIX	# CONT.	PRES. YES/NO	LAB SAMPLE #		COMMENTS
							25/1/04	1000	
1	B-116-W @ 20.0' -MET	25/1/04	1040	25/1/04	3	X			TOTAL LEAD
2	B-116-Q 25.5'	ii	1040	5012	1	X			CA/M 17 METALS / 5 LULF METALS /
3	B-116-Q 35.5'	ii	1110	5012	1	X			PESTICIDES / PCB'S EPA 8081 / 841 / 8082
4	B-116-Q 40.0'	ii	1130	5012	3	X			SM 550F / EPA 418.1M TRPH / TOG
5	B-117-Q 20.0'	ii	1515	ii	3	X			SEMIVOLATILE HYDROCARBONS EPA 8270
6	B-117-Q 40.0'	ii	1650	ii	3	X			OXYGENATED FUEL ADDITIVES EPA 2860M
7									CHLORINATED SOLVENTS
8									SEMI-VOLATILE HYDROCARBONS EPA 8270
9									SM 550F / EPA 418.1M TRPH / TOG
10									CA/M 17 METALS / 5 LULF METALS /
11									B-116-Q 20.0' -MET

SIGNATURES			
RELINQUISHED BY:	<u>H. J. Knott</u>	DATE::	TIME::
RECEIVED BY:		DATE::	TIME::
RELINQUISHED BY:		DATE::	TIME::
RECEIVED BY:		DATE::	TIME::
			RECEIVED BY LABORATORY:
			<u>C. L. Cicco</u>
			SIGNATURE
			DATE
			9/32

PO Box 750336  
Petaluma, CA 94975-0336  
Telephone: (707) 769-3128

110 Liberty Street  
Petaluma, CA 94952  
Fax: (707) 769-8093



Report Date: February 10, 2005

Stephen Knuttel  
SCS Engineers  
3645 Westwind Blvd.  
Santa Rosa, CA 95403

## LABORATORY REPORT

Project Name: **Hessel Road** **01203317.00**

Lab Project Number: **5012702**

This 21 page report of analytical data has been reviewed and approved for release.

Mark A. Valentini, Ph.D.  
Laboratory Director



### TPH Gasoline in Water

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
28016	B-118-W @ 20'	TPH/Gasoline	230	50

Date Sampled:	01/26/05	Date Analyzed:	01/28/05	QC Batch #:	5271
Date Received:	01/27/05	Method:	EPA 5030/8015M		

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
28017	B-119-W @ 3'	TPH/Gasoline	ND	50

Date Sampled:	01/26/05	Date Analyzed:	01/28/05	QC Batch #:	5271
Date Received:	01/27/05	Method:	EPA 5030/8015M		

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
28019	B-119-W@ 20.0'	TPH/Gasoline	3,300	50

Date Sampled:	01/26/05	Date Analyzed:	01/28/05	QC Batch #:	5271
Date Received:	01/27/05	Method:	EPA 5030/8015M		

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
28020	B-118-W@ 37.0'	TPH/Gasoline	ND	50

Date Sampled:	01/26/05	Date Analyzed:	01/31/05	QC Batch #:	5271
Date Received:	01/27/05	Method:	EPA 5030/8015M		



## Volatile Hydrocarbons by GC/MS in Water

Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
28016	B-118-W@ 20'	dichlorodifluoromethane	ND	1.0
		chloromethane	ND	1.0
		vinyl chloride	ND	1.0
		chloroethane	ND	1.0
		bromomethane	ND	1.0
		trichlorofluoromethane	ND	1.0
		1,1-dichloroethene (1,1-DCE)	ND	1.0
		methylene chloride	ND	1.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	1.0
		1,1-dichloroethane (1,1-DCA)	ND	1.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	1.0
		2,2-dichloropropane	ND	1.0
		chloroform (THM1)	ND	1.0
		bromochloromethane	ND	1.0
		1,1,1-trichloroethane (TCA)	ND	1.0
		1,2-dichloroethane (EDC)	4.3	1.0
		1,1-dichloropropene	ND	1.0
		carbon tetrachloride	ND	1.0
		benzene	ND	1.0
		trichloroethene (TCE)	ND	1.0
		1,2-dichloropropene (DCP)	ND	1.0
		dibromomethane	ND	1.0
		bromodichloromethane (THM2)	ND	1.0
		cis-1,3-dichloropropene	ND	1.0
		toluene	ND	1.0
		1,1,2-trichloroethane	ND	1.0
		1,3-dichloropropane	ND	1.0
		dibromochloromethane (THM3)	ND	1.0
		tetrachloroethene (PCE)	ND	1.0
		1,2-dibromoethane (EDB)	ND	1.0
		chlorobenzene	ND	1.0
		1,1,1,2-tetrachloroethane	ND	1.0
		ethyl benzene	2.3	1.0
		m,p-xylene	ND	1.0
		styrene	ND	1.0
		o-xylene	ND	1.0
		bromoform (THM4)	ND	1.0
		1,1,2,2-tetrachloroethane	ND	1.0



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
28016	B-118-W@ 20'	isopropyl benzene	ND	1.0
		1,2,3-trichloropropane	ND	1.0
		bromobenzene	ND	1.0
		n-propyl benzene	ND	1.0
		2-chlorotoluene	ND	1.0
		4-chlorotoluene	ND	1.0
		1,3,5-trimethylbenzene	ND	1.0
		tert-butylbenzene	ND	1.0
		1,2,4-trimethylbenzene	ND	1.0
		sec-butylbenzene	ND	1.0
		1,3-dichlorobenzene	ND	1.0
		1,4-dichlorobenzene	ND	1.0
		1,2-dichlorobenzene	ND	1.0
		p-isopropyltoluene	ND	1.0
		n-butylbenzene	ND	1.0
		1,2,4-trichlorobenzene	ND	1.0
		naphthalene	ND	1.0
		hexachlorobutadiene	ND	1.0
		1,2,3-trichlorobenzene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	ND	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.5	103	70 – 130
toluene-d <sub>8</sub> (20)	19.0	95.0	70 – 130
4-bromofluorobenzene (20)	19.6	98.0	70 – 130

Date Sampled: 01/26/05	Date Analyzed: 01/28/05	QC Batch #: 5272
Date Received: 01/27/05	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
28017	B-119-W@ 3'	dichlorodifluoromethane	ND	1.0
		chloromethane	ND	1.0
		vinyl chloride	ND	1.0
		chloroethane	ND	1.0
		bromomethane	ND	1.0
		trichlorofluoromethane	ND	1.0
		1,1-dichloroethene (1,1-DCE)	ND	1.0
		methylene chloride	ND	1.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	1.0
		1,1-dichloroethane (1,1-DCA)	ND	1.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	1.0
		2,2-dichloropropane	ND	1.0
		chloroform (THM1)	ND	1.0
		bromochloromethane	ND	1.0
		1,1,1-trichloroethane (TCA)	ND	1.0
		1,2-dichloroethane (EDC)	ND	1.0
		1,1-dichloropropene	ND	1.0
		carbon tetrachloride	ND	1.0
		benzene	ND	1.0
		trichloroethene (TCE)	ND	1.0
		1,2-dichloropropane (DCP)	ND	1.0
		dibromomethane	ND	1.0
		bromodichloromethane (THM2)	ND	1.0
		cis-1,3-dichloropropene	ND	1.0
		toluene	1.2	1.0
		1,1,2-trichloroethane	ND	1.0
		1,3-dichloropropane	ND	1.0
		dibromochloromethane (THM3)	ND	1.0
		tetrachloroethene (PCE)	ND	1.0
		1,2-dibromoethane (EDB)	ND	1.0
		chlorobenzene	ND	1.0
		1,1,1,2-tetrachloroethane	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		styrene	ND	1.0
		o-xylene	ND	1.0
		bromoform (THM4)	ND	1.0
		1,1,2,2-tetrachloroethane	ND	1.0



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
28017	B-119-W@ 3'	isopropyl benzene	ND	1.0
		1,2,3-trichloropropane	ND	1.0
		bromobenzene	ND	1.0
		n-propyl benzene	ND	1.0
		2-chlorotoluene	ND	1.0
		4-chlorotoluene	ND	1.0
		1,3,5-trimethylbenzene	ND	1.0
		tert-butylbenzene	ND	1.0
		1,2,4-trimethylbenzene	ND	1.0
		sec-butylbenzene	ND	1.0
		1,3-dichlorobenzene	ND	1.0
		1,4-dichlorobenzene	ND	1.0
		1,2-dichlorobenzene	ND	1.0
		p-isopropyltoluene	ND	1.0
		n-butylbenzene	ND	1.0
		1,2,4-trichlorobenzene	ND	1.0
		naphthalene	ND	1.0
		hexachlorobutadiene	ND	1.0
		1,2,3-trichlorobenzene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	ND	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.4	102	70 – 130
toluene-d <sub>8</sub> (20)	18.6	93.0	70 – 130
4-bromofluorobenzene (20)	19.5	97.5	70 – 130

Date Sampled: 01/26/05	Date Analyzed: 01/28/05	QC Batch #: 5272
Date Received: 01/27/05	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
28019	B-119-W@ 20.0'	dichlorodifluoromethane	ND	20
		chloromethane	ND	20
		vinyl chloride	ND	20
		chloroethane	ND	20
		bromomethane	ND	20
		trichlorofluoromethane	ND	20
		1,1-dichloroethene (1,1-DCE)	ND	20
		methylene chloride	ND	20
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	20
		1,1-dichloroethane (1,1-DCA)	ND	20
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	20
		2,2-dichloropropane	ND	20
		chloroform (THM1)	ND	20
		bromochloromethane	ND	20
		1,1,1-trichloroethane (TCA)	ND	20
		1,2-dichloroethane (EDC)	61	20
		1,1-dichloropropene	ND	20
		carbon tetrachloride	ND	20
		benzene	1,100	20
		trichloroethene (TCE)	ND	20
		1,2-dichloropropane (DCP)	ND	20
		dibromomethane	ND	20
		bromodichloromethane (THM2)	ND	20
		cis-1,3-dichloropropene	ND	20
		toluene	30	20
		1,1,2-trichloroethane	ND	20
		1,3-dichloropropane	ND	20
		dibromochloromethane (THM3)	ND	20
		tetrachloroethene (PCE)	ND	20
		1,2-dibromoethane (EDB)	ND	20
		chlorobenzene	ND	20
		1,1,1,2-tetrachloroethane	ND	20
		ethyl benzene	170	20
		m,p-xylene	110	20
		styrene	ND	20
		o-xylene	ND	20
		bromoform (THM4)	ND	20
		1,1,2,2-tetrachloroethane	ND	20



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
28019	B-119-W@ 20.0'	isopropyl benzene	ND	20
		1,2,3-trichloropropane	ND	20
		bromobenzene	ND	20
		n-propyl benzene	ND	20
		2-chlorotoluene	ND	20
		4-chlorotoluene	ND	20
		1,3,5-trimethylbenzene	23	20
		tert-butylbenzene	ND	20
		1,2,4-trimethylbenzene	40	20
		sec-butylbenzene	ND	20
		1,3-dichlorobenzene	ND	20
		1,4-dichlorobenzene	ND	20
		1,2-dichlorobenzene	ND	20
		p-isopropyltoluene	ND	20
		n-butylbenzene	ND	20
		1,2,4-trichlorobenzene	ND	20
		naphthalene	57	20
		hexachlorobutadiene	ND	20
		1,2,3-trichlorobenzene	ND	20

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	500
methyl tert-butyl ether (MTBE)	ND	20
di-isopropyl ether (DIPE)	ND	20
ethyl tert-butyl ether (ETBE)	ND	20
tert-amyl methyl ether (TAME)	ND	20

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.3	102	70 – 130
toluene-d <sub>8</sub> (20)	18.9	94.5	70 – 130
4-bromofluorobenzene (20)	19.3	96.5	70 – 130

Date Sampled: 01/26/05	Date Analyzed: 01/29/05	QC Batch #: 5272
Date Received: 01/27/05	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
28020	B-118-W@ 37.0'	dichlorodifluoromethane	ND	1.0
		chloromethane	ND	1.0
		vinyl chloride	ND	1.0
		chloroethane	ND	1.0
		bromomethane	ND	1.0
		trichlorofluoromethane	ND	1.0
		1,1-dichloroethene (1,1-DCE)	ND	1.0
		methylene chloride	ND	1.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	1.0
		1,1-dichloroethane (1,1-DCA)	ND	1.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	1.0
		2,2-dichloropropane	ND	1.0
		chloroform (THM1)	ND	1.0
		bromochloromethane	ND	1.0
		1,1,1-trichloroethane (TCA)	ND	1.0
		1,2-dichloroethane (EDC)	ND	1.0
		1,1-dichloropropene	ND	1.0
		carbon tetrachloride	ND	1.0
		benzene	ND	1.0
		trichloroethene (TCE)	ND	1.0
		1,2-dichloropropane (DCP)	ND	1.0
		dibromomethane	ND	1.0
		bromodichloromethane (THM2)	ND	1.0
		cis-1,3-dichloropropene	ND	1.0
		toluene	ND	1.0
		1,1,2-trichloroethane	ND	1.0
		1,3-dichloropropane	ND	1.0
		dibromochloromethane (THM3)	ND	1.0
		tetrachloroethene (PCE)	ND	1.0
		1,2-dibromoethane (EDB)	ND	1.0
		chlorobenzene	ND	1.0
		1,1,1,2-tetrachloroethane	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		styrene	ND	1.0
		o-xylene	ND	1.0
		bromoform (THM4)	ND	1.0
		1,1,2,2-tetrachloroethane	ND	1.0



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
28020	B-118-W@ 37.0'	isopropyl benzene	ND	1.0
		1,2,3-trichloropropane	ND	1.0
		bromobenzene	ND	1.0
		n-propyl benzene	ND	1.0
		2-chlorotoluene	ND	1.0
		4-chlorotoluene	ND	1.0
		1,3,5-trimethylbenzene	ND	1.0
		tert-butylbenzene	ND	1.0
		1,2,4-trimethylbenzene	ND	1.0
		sec-butylbenzene	ND	1.0
		1,3-dichlorobenzene	ND	1.0
		1,4-dichlorobenzene	ND	1.0
		1,2-dichlorobenzene	ND	1.0
		p-isopropyltoluene	ND	1.0
		n-butylbenzene	ND	1.0
		1,2,4-trichlorobenzene	ND	1.0
		naphthalene	ND	1.0
		hexachlorobutadiene	ND	1.0
		1,2,3-trichlorobenzene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	ND	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.9	105	70 – 130
toluene-d <sub>8</sub> (20)	19.2	96.0	70 – 130
4-bromofluorobenzene (20)	19.5	97.5	70 – 130

Date Sampled: 01/26/05	Date Analyzed: 01/29/05	QC Batch #: 5272
Date Received: 01/27/05	Method: EPA 8260B	



## TPH Gasoline in Soil

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Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
28018	B-119@20.5'	TPH/Gasoline	1.0	1.0

Date Sampled:	01/26/05	Date Analyzed:	01/28/05	QC Batch #:	5258
Date Received:	01/27/05	Method:	EPA 8015M		

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Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
28021	B-119@31.0'	TPH/Gasoline	ND	1.0

Date Sampled:	01/26/05	Date Analyzed:	01/28/05	QC Batch #:	5258
Date Received:	01/27/05	Method:	EPA 8015M		

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## Volatile Hydrocarbons by GC/MS in Soil

Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28018	B-119@ 20.5'	dichlorodifluoromethane	ND	2.0
		chloromethane	ND	2.0
		vinyl chloride	ND	2.0
		chloroethane	ND	2.0
		bromomethane	ND	2.0
		trichlorofluoromethane	ND	2.0
		1,1-dichloroethene (1,1-DCE)	ND	2.0
		methylene chloride	ND	2.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	2.0
		1,1-dichloroethane (1,1-DCA)	ND	2.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	2.0
		2,2-dichloropropane	ND	2.0
		chloroform (THM1)	ND	2.0
		bromoform (THM2)	ND	2.0
		1,1,1-trichloroethane (TCA)	ND	2.0
		1,2-dichloroethane (EDC)	2.0	2.0
		1,1-dichloropropene	ND	2.0
		carbon tetrachloride	ND	2.0
		benzene	210	2.0
		trichloroethene (TCE)	ND	2.0
		1,2-dichloropropane (DCP)	ND	2.0
		dibromomethane	ND	2.0
		bromodichloromethane (THM2)	ND	2.0
		cis-1,3-dichloropropene	ND	2.0
		toluene	8.2	2.0
		1,1,2-trichloroethane	ND	2.0
		1,3-dichloropropane	ND	2.0
		dibromochloromethane (THM3)	ND	2.0
		tetrachloroethene (PCE)	ND	2.0
		1,2-dibromoethane (EDB)	ND	2.0
		chlorobenzene	ND	2.0
		1,1,1,2-tetrachloroethane	ND	2.0
		ethyl benzene	41	2.0
		m,p-xylene	63	2.0
		styrene	ND	2.0
		o-xylene	ND	2.0
		bromoform (THM4)	ND	2.0
		1,1,2,2-tetrachloroethane	ND	2.0



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28018	B-119@ 20.5'	isopropyl benzene	ND	2.0
		1,2,3-trichloropropane	ND	2.0
		bromobenzene	ND	2.0
		n-propyl benzene	3.5	2.0
		2-chlorotoluene	ND	2.0
		4-chlorotoluene	ND	2.0
		1,3,5-trimethylbenzene	8.6	2.0
		tert-butylbenzene	ND	2.0
		1,2,4-trimethylbenzene	25	2.0
		sec-butylbenzene	ND	2.0
		1,3-dichlorobenzene	ND	2.0
		1,4-dichlorobenzene	ND	2.0
		1,2-dichlorobenzene	ND	2.0
		p-isopropyltoluene	ND	2.0
		n-butylbenzene	ND	2.0
		1,2,4-trichlorobenzene	ND	2.0
		naphthalene	15	2.0
		hexachlorobutadiene	ND	2.0
		1,2,3-trichlorobenzene	ND	2.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	50
methyl tert-butyl ether (MTBE)	ND	2.0
di-isopropyl ether (DIPE)	ND	2.0
ethyl tert-butyl ether (ETBE)	ND	2.0
tert-amyl methyl ether (TAME)	ND	2.0

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.7	104	70 – 130
toluene-d <sub>8</sub> (20)	18.9	94.5	70 – 130
4-bromofluorobenzene (20)	19.5	97.5	70 – 130

Date Sampled: 01/26/05	Date Analyzed: 01/29/05	QC Batch #: 5250
Date Received: 01/27/05	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28021	B-119@ 31.0'	dichlorodifluoromethane	ND	2.0
		chloromethane	ND	2.0
		vinyl chloride	ND	2.0
		chloroethane	ND	2.0
		bromomethane	ND	2.0
		trichlorofluoromethane	ND	2.0
		1,1-dichloroethene (1,1-DCE)	ND	2.0
		methylene chloride	ND	2.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	2.0
		1,1-dichloroethane (1,1-DCA)	ND	2.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	2.0
		2,2-dichloropropane	ND	2.0
		chloroform (THM1)	ND	2.0
		bromoform (THM2)	ND	2.0
		1,1,1-trichloroethane (TCA)	ND	2.0
		1,2-dichloroethane (EDC)	ND	2.0
		1,1-dichloropropene	ND	2.0
		carbon tetrachloride	ND	2.0
		benzene	ND	2.0
		trichloroethene (TCE)	ND	2.0
		1,2-dichloropropane (DCP)	ND	2.0
		dibromomethane	ND	2.0
		bromodichloromethane (THM3)	ND	2.0
		cis-1,3-dichloropropene	ND	2.0
		toluene	ND	2.0
		1,1,2-trichloroethane	ND	2.0
		1,3-dichloropropane	ND	2.0
		dibromochloromethane (THM4)	ND	2.0
		tetrachloroethene (PCE)	ND	2.0
		1,2-dibromoethane (EDB)	ND	2.0
		chlorobenzene	ND	2.0
		1,1,1,2-tetrachloroethane	ND	2.0
		ethyl benzene	ND	2.0
		m,p-xylene	ND	2.0
		styrene	ND	2.0
		o-xylene	ND	2.0
		bromoform (THM5)	ND	2.0
		1,1,2,2-tetrachloroethane	ND	2.0



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28021	B-119@ 31.0'	isopropyl benzene	ND	2.0
		1,2,3-trichloropropane	ND	2.0
		bromobenzene	ND	2.0
		n-propyl benzene	ND	2.0
		2-chlorotoluene	ND	2.0
		4-chlorotoluene	ND	2.0
		1,3,5-trimethylbenzene	ND	2.0
		tert-butylbenzene	ND	2.0
		1,2,4-trimethylbenzene	ND	2.0
		sec-butylbenzene	ND	2.0
		1,3-dichlorobenzene	ND	2.0
		1,4-dichlorobenzene	ND	2.0
		1,2-dichlorobenzene	ND	2.0
		p-isopropyltoluene	ND	2.0
		n-butylbenzene	ND	2.0
		1,2,4-trichlorobenzene	ND	2.0
		naphthalene	ND	2.0
		hexachlorobutadiene	ND	2.0
		1,2,3-trichlorobenzene	ND	2.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	50
methyl tert-butyl ether (MTBE)	ND	2.0
di-isopropyl ether (DIPE)	ND	2.0
ethyl tert-butyl ether (ETBE)	ND	2.0
tert-amyl methyl ether (TAME)	ND	2.0

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	21.5	108	70 – 130
toluene-d <sub>8</sub> (20)	19.3	96.5	70 – 130
4-bromofluorobenzene (20)	19.3	96.5	70 – 130

Date Sampled: 01/26/05	Date Analyzed: 01/29/05	QC Batch #: 5250
Date Received: 01/27/05	Method: EPA 8260B	



# LABORATORY

## QUALITY ASSURANCE REPORT

QC Batch #: 5271

Lab Project #: 5012702

Sample ID	Compound	Result (ug/L)
MB	TPH/Gas	ND
MB	MTBE	ND
MB	Benzene	ND
MB	Toluene	ND
MB	Ethyl Benzene	ND
MB	Xylenes	ND

Sample #	Sample ID	Compound	Result (ug/L)	Spike Level	% Recv.
28016	CMS	TPH/Gas		NS	
	CMS	Benzene	10.7	10.0	107
	CMS	Toluene	9.38	10.0	93.8
	CMS	Ethyl Benzene	10.3	10.0	103
	CMS	Xylenes	31.6	30.0	105

Sample #	Sample ID	Compound	Result (ug/L)	Spike Level	% Recv.	RPD
28016	CMSD	TPH/Gas		NS		
	CMSD	Benzene	10.8	10.0	108	0.55
	CMSD	Toluene	9.39	10.0	93.9	0.07
	CMSD	Ethyl Benzene	10.3	10.0	103	0
	CMSD	Xylenes	33.0	30.0	110	4.4

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery



QC Batch #: 5272

Lab Project #: 5012702

Sample ID	Compound Name	Result (ug/L)
MB	1,1-dichloroethene	ND
MB	benzene	ND
MB	trichloroethene	ND
MB	toluene	ND
MB	chlorobenzene	ND

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.8	104	70 – 130
toluene-d <sub>8</sub> (20)	19.4	97.0	70 – 130
4-bromofluorobenzene (20)	19.9	99.5	70 – 130

Sample #	Sample ID	Compound Name	Result (ug/L)	Spike Level	% Recv.
27978	CMS	1,1-dichloroethene	29.3	25.0	117
	CMS	benzene	28.9	25.0	107
	CMS	trichloroethene	23.0	25.0	92.0
	CMS	toluene	25.8	25.0	103
	CMS	chlorobenzene	26.6	25.0	106

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.5	103	70 – 130
toluene-d <sub>8</sub> (20)	19.2	96.0	70 – 130
4-bromofluorobenzene (20)	19.3	96.5	70 – 130



Sample #	Sample ID	Compound Name	Result (ug/L)	Spike Level	% Recv.	RPD
27978	CMSD	1,1-dichloroethene	27.4	25.0	110	6.7
	CMSD	benzene	27.4	25.0	101	5.8
	CMSD	trichloroethene	21.8	25.0	87.2	5.4
	CMSD	toluene	24.6	25.0	98.4	4.8
	CMSD	chlorobenzene	25.1	25.0	100	5.8

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.6	103	70 – 130
toluene-d <sub>8</sub> (20)	19.6	98.0	70 – 130
4-bromofluorobenzene (20)	19.4	97.0	70 – 130

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery

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QC Batch #: 5258

Lab Project #: 5012702

Sample ID	Compound	Result (mg/kg)
MB	TPH/Gas	ND
MB	MTBE	ND
MB	Benzene	ND
MB	Toluene	ND
MB	Ethyl Benzene	ND
MB	Xylenes	ND

Sample ID	Compound	Result (mg/kg)	Spike Level	% Recv.
LCS	TPH/Gas		NS	
LCS	Benzene	0.096	0.100	95.8
LCS	Toluene	0.098	0.100	97.8
LCS	Ethyl Benzene	0.101	0.100	101
LCS	Xylenes	0.316	0.300	105

Sample ID	Compound	Result (mg/kg)	Spike Level	% Recv.	RPD
LCSD	TPH/Gas		NS		
LCSD	Benzene	0.096	0.100	95.9	0.07
LCSD	Toluene	0.097	0.100	97.4	0.34
LCSD	Ethyl Benzene	0.101	0.100	101	0.76
LCSD	Xylenes	0.313	0.300	104	0.95

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery



QC Batch #: 5250

Lab Project #: 5012702

Sample ID	Compound Name	Result (ug/kg)
MB	1,1-dichloroethene	ND
MB	benzene	ND
MB	trichloroethene	ND
MB	toluene	ND
MB	chlorobenzene	ND

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.4	102	70 – 130
toluene-d <sub>8</sub> (20)	19.7	98.5	70 – 130
4-bromofluorobenzene (20)	19.4	97.0	70 – 130

Sample ID	Compound Name	Result (ug/kg)	Spike Level	% Recv.
LCS	1,1-dichloroethene	28.5	25.0	114
LCS	benzene	27.3	25.0	109
LCS	trichloroethene	23.9	25.0	95.6
LCS	toluene	26.6	25.0	106
LCS	chlorobenzene	26.4	25.0	106

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.3	102	70 – 130
toluene-d <sub>8</sub> (20)	19.8	99.0	70 – 130
4-bromofluorobenzene (20)	19.1	95.5	70 – 130



Sample ID	Compound Name	Result (ug/kg)	Spike Level	% Recv.	RPD
LCSD	1,1-dichloroethene	28.0	25.0	112	1.8
LCSD	benzene	26.6	25.0	106	2.6
LCSD	trichloroethene	23.4	25.0	93.6	2.1
LCSD	toluene	25.8	25.0	103	3.1
LCSD	chlorobenzene	25.7	25.0	103	2.7

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.2	101	70 – 130
toluene-d <sub>8</sub> (20)	19.8	99.0	70 – 130
4-bromofluorobenzene (20)	19.2	96.0	70 – 130

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; No Recovery

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**CHAIN OF CUSTODY**

Analytical Sciences  
P.O. Box 750336, Petaluma, CA 94975-0336  
110 Liberty Street, Petaluma, CA 94952  
(707) 769-3128

**CLIENT INFORMATION**

COMPANY NAME: SCS ENGINEERS	BILLING INFORMATION
ADDRESS: 3645 WESTWIND BOULEVARD	CONTACT: John Riddell
SANTA ROSA, CA 95403	COMPANY NAME: 4160 Nessel Rd
CONTACT: Stephen Knuttel	ADDRESS: Sebastopol CA 95472
PHONE#: (707) 546-9461	PHONE#: (707) 823-1972
FAX #: (707) 544-5769	FAX #:

**ANALYSIS**

LAB PROJECT NUMBER:	5012702
SCS ENGINEERS PROJECT NAME:	Nessel Road
SCS ENGINEERS PROJECT NUMBER:	0120331700
TURNAROUND TIME (check one)	<input checked="" type="checkbox"/> SAME DAY <input type="checkbox"/> 24 HOURS <input type="checkbox"/> 72 HOURS <input type="checkbox"/> NORMAL
COOLER TEMPERATURE	<input type="checkbox"/>
COC	<input checked="" type="checkbox"/>
PAGE _____ OF _____	

ITEM	CLIENT SAMPLE I.D.	DATE SAMPLED	TIME	MATRIX	#	PRESV. YES/NO	CONT.	TYP/GAS/BESTK	3-MTRP	TPH/DIESEL / MOTOR OIL	VOLATILE HYDROCARBONS	EPA 8015M/8020	+OXY / Fuel Additives	EPA 8260 Full List	BTEX & OXYGENATES +PB SCAVENGEERS	FUEL ADDITIVES EPA 2860M	CHLORINATED SOLVENTS	SEMI-VOLATILE HYDROCARBONS EPA 2870	TRPH / TGC SM 5520F / EPA 418.1M	PESTICIDES / PCB'S EPA 8081 / 8141 / 8082	CAM 17 METALS / 6 LUT METALS	TOTAL LEAD	CO	COMMENTS	PAGE _____ OF _____	LAB SAMPLE #	
1	05-18-2001	1/26/05	11:30	W	1						X																
2	05-19-2001	1/26/05	11:30	W	1						X																
3	05-18-2001	1/26/05	11:30	W	1						X																
4	05-19-2001	1/26/05	2:10	S	1						X																
5	05-19-2001	1/26/05	12:35	W	4						X																
6	05-18-2001	1/26/05	3:05	W	4						X																
7	05-19-2001	1/26/05	2:45	S	1						X																
8																											
9																											
10																											
11																											

RELINQUISHED BY: <u>John Riddell</u>	DATE: 2/11/05	TIME: 10:20	RECEIVED BY LABORATORY: <u>CC</u>
RECEIVED BY: _____	DATE: _____	TIME: _____	RELINQUISHED BY: _____
RELINQUISHED BY: _____	DATE: _____	TIME: _____	RECEIVED BY: _____
RECEIVED BY: <u>John Riddell</u>	DATE: 2/11/05	TIME: 10:25	SIGNATURE: <u>CC</u>



Report Date: February 23, 2005

Stephen Knuttel  
SCS Engineers  
3645 Westwind Blvd.  
Santa Rosa, CA 95403

## LABORATORY REPORT

Project Name: **Hessel Rd.** **01203317.00**

Lab Project Number: **5020903**

This 21 page report of analytical data has been reviewed and approved for release.

Mark A. Valentini, Ph.D.  
Laboratory Director



### TPH Gasoline in Water

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Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
28206	B-121-W@ 5.0'	TPH/Gasoline	ND	50

Date Sampled: 02/08/05	Date Analyzed: 02/14/05	QC Batch #: 5280
Date Received: 02/09/05	Method: EPA 5030/8015M	

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
28207	B-121-W@ 15.0'	TPH/Gasoline	350	50

Date Sampled: 02/08/05	Date Analyzed: 02/14/05	QC Batch #: 5280
Date Received: 02/09/05	Method: EPA 5030/8015M	

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
28211	B-121-W@ 35.0'	TPH/Gasoline	ND	50

Date Sampled: 02/08/05	Date Analyzed: 02/14/05	QC Batch #: 5280
Date Received: 02/09/05	Method: EPA 5030/8015M	



## Volatile Hydrocarbons by GC/MS in Water

Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
28206	B-121-W@ 5.0'	dichlorodifluoromethane	ND	1.0
		chloromethane	ND	1.0
		vinyl chloride	ND	1.0
		chloroethane	ND	1.0
		bromomethane	ND	1.0
		trichlorofluoromethane	ND	1.0
		1,1-dichloroethene (1,1-DCE)	ND	1.0
		methylene chloride	ND	1.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	1.0
		1,1-dichloroethane (1,1-DCA)	ND	1.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	1.0
		2,2-dichloropropane	ND	1.0
		chloroform (THM1)	ND	1.0
		bromoform (THM2)	ND	1.0
		1,1,1-trichloroethane (TCA)	ND	1.0
		1,2-dichloroethane (EDC)	ND	1.0
		1,1-dichloropropene	ND	1.0
		carbon tetrachloride	ND	1.0
		benzene	ND	1.0
		trichloroethene (TCE)	ND	1.0
		1,2-dichloropropane (DCP)	ND	1.0
		dibromomethane	ND	1.0
		bromodichloromethane (THM2)	ND	1.0
		cis-1,3-dichloropropene	ND	1.0
		toluene	ND	1.0
		1,1,2-trichloroethane	ND	1.0
		1,3-dichloropropane	ND	1.0
		dibromochloromethane (THM3)	ND	1.0
		tetrachloroethene (PCE)	ND	1.0
		1,2-dibromoethane (EDB)	ND	1.0
		chlorobenzene	ND	1.0
		1,1,1,2-tetrachloroethane	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		styrene	ND	1.0
		o-xylene	ND	1.0
		bromoform (THM4)	ND	1.0
		1,1,2,2-tetrachloroethane	ND	1.0



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
28206	B-121-W@ 5.0'	isopropyl benzene	ND	1.0
		1,2,3-trichloropropane	ND	1.0
		bromobenzene	ND	1.0
		n-propyl benzene	ND	1.0
		2-chlorotoluene	ND	1.0
		4-chlorotoluene	ND	1.0
		1,3,5-trimethylbenzene	ND	1.0
		tert-butylbenzene	ND	1.0
		1,2,4-trimethylbenzene	ND	1.0
		sec-butylbenzene	ND	1.0
		1,3-dichlorobenzene	ND	1.0
		1,4-dichlorobenzene	ND	1.0
		1,2-dichlorobenzene	ND	1.0
		p-isopropyltoluene	ND	1.0
		n-butylbenzene	ND	1.0
		1,2,4-trichlorobenzene	ND	1.0
		naphthalene	ND	1.0
		hexachlorobutadiene	ND	1.0
		1,2,3-trichlorobenzene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	ND	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.4	97.0	70 – 130
toluene-d <sub>8</sub> (20)	20.2	101	70 – 130
4-bromofluorobenzene (20)	19.7	98.5	70 – 130

Date Sampled: 02/08/05	Date Analyzed: 02/09/05	QC Batch #: 5297
Date Received: 02/09/05	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
28207	B-121-W@ 15.0'	dichlorodifluoromethane	ND	1.0
		chloromethane	ND	1.0
		vinyl chloride	ND	1.0
		chloroethane	ND	1.0
		bromomethane	ND	1.0
		trichlorofluoromethane	ND	1.0
		1,1-dichloroethene (1,1-DCE)	ND	1.0
		methylene chloride	ND	1.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	1.0
		1,1-dichloroethane (1,1-DCA)	ND	1.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	1.0
		2,2-dichloropropane	ND	1.0
		chloroform (THM1)	ND	1.0
		bromochloromethane	ND	1.0
		1,1,1-trichloroethane (TCA)	ND	1.0
		1,2-dichloroethane (EDC)	2.4	1.0
		1,1-dichloropropene	ND	1.0
		carbon tetrachloride	ND	1.0
		benzene	1.3	1.0
		trichloroethene (TCE)	ND	1.0
		1,2-dichloropropane (DCP)	ND	1.0
		dibromomethane	ND	1.0
		bromodichloromethane (THM2)	ND	1.0
		cis-1,3-dichloropropene	ND	1.0
		toluene	ND	1.0
		1,1,2-trichloroethane	ND	1.0
		1,3-dichloropropane	ND	1.0
		dibromochloromethane (THM3)	ND	1.0
		tetrachloroethene (PCE)	ND	1.0
		1,2-dibromoethane (EDB)	ND	1.0
		chlorobenzene	ND	1.0
		1,1,1,2-tetrachloroethane	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		styrene	ND	1.0
		o-xylene	ND	1.0
		bromoform (THM4)	ND	1.0
		1,1,2,2-tetrachloroethane	ND	1.0



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
28207	B-121-W@ 15.0'	isopropyl benzene	ND	1.0
		1,2,3-trichloropropane	ND	1.0
		bromobenzene	ND	1.0
		n-propyl benzene	1.5	1.0
		2-chlorotoluene	ND	1.0
		4-chlorotoluene	ND	1.0
		1,3,5-trimethylbenzene	ND	1.0
		tert-butylbenzene	ND	1.0
		1,2,4-trimethylbenzene	ND	1.0
		sec-butylbenzene	ND	1.0
		1,3-dichlorobenzene	ND	1.0
		1,4-dichlorobenzene	ND	1.0
		1,2-dichlorobenzene	ND	1.0
		p-isopropyltoluene	ND	1.0
		n-butylbenzene	ND	1.0
		1,2,4-trichlorobenzene	ND	1.0
		naphthalene	ND	1.0
		hexachlorobutadiene	ND	1.0
		1,2,3-trichlorobenzene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	ND	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.6	98.0	70 – 130
toluene-d <sub>8</sub> (20)	20.2	101	70 – 130
4-bromofluorobenzene (20)	19.8	99.0	70 – 130

Date Sampled: 02/08/05	Date Analyzed: 02/09/05	QC Batch #: 5297
Date Received: 02/09/05	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
28211	B-121-W@ 35.0'	dichlorodifluoromethane	ND	1.0
		chloromethane	ND	1.0
		vinyl chloride	ND	1.0
		chloroethane	ND	1.0
		bromomethane	ND	1.0
		trichlorofluoromethane	ND	1.0
		1,1-dichloroethene (1,1-DCE)	ND	1.0
		methylene chloride	ND	1.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	1.0
		1,1-dichloroethane (1,1-DCA)	ND	1.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	1.0
		2,2-dichloropropane	ND	1.0
		chloroform (THM1)	ND	1.0
		bromochloromethane	ND	1.0
		1,1,1-trichloroethane (TCA)	ND	1.0
		1,2-dichloroethane (EDC)	ND	1.0
		1,1-dichloropropene	ND	1.0
		carbon tetrachloride	ND	1.0
		benzene	1.5	1.0
		trichloroethene (TCE)	ND	1.0
		1,2-dichloropropane (DCP)	ND	1.0
		dibromomethane	ND	1.0
		bromodichloromethane (THM2)	ND	1.0
		cis-1,3-dichloropropene	ND	1.0
		toluene	ND	1.0
		1,1,2-trichloroethane	ND	1.0
		1,3-dichloropropane	ND	1.0
		dibromochloromethane (THM3)	ND	1.0
		tetrachloroethene (PCE)	ND	1.0
		1,2-dibromoethane (EDB)	ND	1.0
		chlorobenzene	ND	1.0
		1,1,1,2-tetrachloroethane	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		styrene	ND	1.0
		o-xylene	ND	1.0
		bromoform (THM4)	ND	1.0
		1,1,2,2-tetrachloroethane	ND	1.0



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
28211	B-121-W@ 35.0'	isopropyl benzene	ND	1.0
		1,2,3-trichloropropane	ND	1.0
		bromobenzene	ND	1.0
		n-propyl benzene	ND	1.0
		2-chlorotoluene	ND	1.0
		4-chlorotoluene	ND	1.0
		1,3,5-trimethylbenzene	ND	1.0
		tert-butylbenzene	ND	1.0
		1,2,4-trimethylbenzene	ND	1.0
		sec-butylbenzene	ND	1.0
		1,3-dichlorobenzene	ND	1.0
		1,4-dichlorobenzene	ND	1.0
		1,2-dichlorobenzene	ND	1.0
		p-isopropyltoluene	ND	1.0
		n-butylbenzene	ND	1.0
		1,2,4-trichlorobenzene	ND	1.0
		naphthalene	ND	1.0
		hexachlorobutadiene	ND	1.0
		1,2,3-trichlorobenzene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	ND	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.0	100	70 – 130
toluene-d <sub>8</sub> (20)	20.1	101	70 – 130
4-bromofluorobenzene (20)	19.7	98.5	70 – 130

Date Sampled: 02/08/05	Date Analyzed: 02/09/05	QC Batch #: 5297
Date Received: 02/09/05	Method: EPA 8260B	



## TPH Gasoline in Soil

Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
28208	B-121@ 16.5'	TPH/Gasoline	ND	1.0

Date Sampled: 02/08/05	Date Analyzed: 02/15/05	QC Batch #: 5289
Date Received: 02/09/05	Method: EPA 8015M	

Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
28209	B-121@ 21.0'	TPH/Gasoline	ND	1.0

Date Sampled: 02/08/05	Date Analyzed: 02/15/05	QC Batch #: 5289
Date Received: 02/09/05	Method: EPA 8015M	

Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
28210	B-121@ 26.0'	TPH/Gasoline	ND	1.0

Date Sampled: 02/08/05	Date Analyzed: 02/15/05	QC Batch #: 5289
Date Received: 02/09/05	Method: EPA 8015M	



## Volatile Hydrocarbons by GC/MS in Soil

Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28208	B-121 @ 16.5'	dichlorodifluoromethane	ND	2.0
		chloromethane	ND	2.0
		vinyl chloride	ND	2.0
		chloroethane	ND	2.0
		bromomethane	ND	2.0
		trichlorofluoromethane	ND	2.0
		1,1-dichloroethene (1,1-DCE)	ND	2.0
		methylene chloride	ND	2.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	2.0
		1,1-dichloroethane (1,1-DCA)	ND	2.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	2.0
		2,2-dichloropropane	ND	2.0
		chloroform (THM1)	ND	2.0
		bromochloromethane	ND	2.0
		1,1,1-trichloroethane (TCA)	ND	2.0
		1,2-dichloroethane (EDC)	ND	2.0
		1,1-dichloropropene	ND	2.0
		carbon tetrachloride	ND	2.0
		benzene	ND	2.0
		trichloroethene (TCE)	ND	2.0
		1,2-dichloropropane (DCP)	ND	2.0
		dibromomethane	ND	2.0
		bromodichloromethane (THM2)	ND	2.0
		cis-1,3-dichloropropene	ND	2.0
		toluene	ND	2.0
		1,1,2-trichloroethane	ND	2.0
		1,3-dichloropropane	ND	2.0
		dibromochloromethane (THM3)	ND	2.0
		tetrachloroethene (PCE)	ND	2.0
		1,2-dibromoethane (EDB)	ND	2.0
		chlorobenzene	ND	2.0
		1,1,1,2-tetrachloroethane	ND	2.0
		ethyl benzene	ND	2.0
		m,p-xylene	ND	2.0
		styrene	ND	2.0
		o-xylene	ND	2.0
		bromoform (THM4)	ND	2.0
		1,1,2,2-tetrachloroethane	ND	2.0



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28208	B-121 @ 16.5'	isopropyl benzene	ND	2.0
		1,2,3-trichloropropane	ND	2.0
		bromobenzene	ND	2.0
		n-propyl benzene	ND	2.0
		2-chlorotoluene	ND	2.0
		4-chlorotoluene	ND	2.0
		1,3,5-trimethylbenzene	ND	2.0
		tert-butylbenzene	ND	2.0
		1,2,4-trimethylbenzene	ND	2.0
		sec-butylbenzene	ND	2.0
		1,3-dichlorobenzene	ND	2.0
		1,4-dichlorobenzene	ND	2.0
		1,2-dichlorobenzene	ND	2.0
		p-isopropyltoluene	ND	2.0
		n-butylbenzene	ND	2.0
		1,2,4-trichlorobenzene	ND	2.0
		naphthalene	ND	2.0
		hexachlorobutadiene	ND	2.0
		1,2,3-trichlorobenzene	ND	2.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	50
methyl tert-butyl ether (MTBE)	ND	2.0
di-isopropyl ether (DIPE)	ND	2.0
ethyl tert-butyl ether (ETBE)	ND	2.0
tert-amyl methyl ether (TAME)	ND	2.0

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.5	103	70 – 130
toluene-d <sub>8</sub> (20)	19.8	99.0	70 – 130
4-bromofluorobenzene (20)	19.7	98.5	70 – 130

Date Sampled: 02/08/05	Date Analyzed: 02/09/05	QC Batch #: 5299
Date Received: 02/09/05	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28209	B-121 @ 21.0'	dichlorodifluoromethane	ND	2.0
		chloromethane	ND	2.0
		vinyl chloride	ND	2.0
		chloroethane	ND	2.0
		bromomethane	ND	2.0
		trichlorofluoromethane	ND	2.0
		1,1-dichloroethene (1,1-DCE)	ND	2.0
		methylene chloride	ND	2.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	2.0
		1,1-dichloroethane (1,1-DCA)	ND	2.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	2.0
		2,2-dichloropropane	ND	2.0
		chloroform (THM1)	ND	2.0
		bromochloromethane	ND	2.0
		1,1,1-trichloroethane (TCA)	ND	2.0
		1,2-dichloroethane (EDC)	ND	2.0
		1,1-dichloropropene	ND	2.0
		carbon tetrachloride	ND	2.0
		benzene	7.0	2.0
		trichloroethene (TCE)	ND	2.0
		1,2-dichloropropane (DCP)	ND	2.0
		dibromomethane	ND	2.0
		bromodichloromethane (THM2)	ND	2.0
		cis-1,3-dichloropropene	ND	2.0
		toluene	ND	2.0
		1,1,2-trichloroethane	ND	2.0
		1,3-dichloropropane	ND	2.0
		dibromochloromethane (THM3)	ND	2.0
		tetrachloroethene (PCE)	ND	2.0
		1,2-dibromoethane (EDB)	ND	2.0
		chlorobenzene	ND	2.0
		1,1,1,2-tetrachloroethane	ND	2.0
		ethyl benzene	ND	2.0
		m,p-xylene	ND	2.0
		styrene	ND	2.0
		o-xylene	ND	2.0
		bromoform (THM4)	ND	2.0
		1,1,2,2-tetrachloroethane	ND	2.0



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28209	B-121 @ 21.0'	isopropyl benzene	ND	2.0
		1,2,3-trichloropropane	ND	2.0
		bromobenzene	ND	2.0
		n-propyl benzene	ND	2.0
		2-chlorotoluene	ND	2.0
		4-chlorotoluene	ND	2.0
		1,3,5-trimethylbenzene	ND	2.0
		tert-butylbenzene	ND	2.0
		1,2,4-trimethylbenzene	ND	2.0
		sec-butylbenzene	ND	2.0
		1,3-dichlorobenzene	ND	2.0
		1,4-dichlorobenzene	ND	2.0
		1,2-dichlorobenzene	ND	2.0
		p-isopropyltoluene	ND	2.0
		n-butylbenzene	ND	2.0
		1,2,4-trichlorobenzene	ND	2.0
		naphthalene	ND	2.0
		hexachlorobutadiene	ND	2.0
		1,2,3-trichlorobenzene	ND	2.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	50
methyl tert-butyl ether (MTBE)	ND	2.0
di-isopropyl ether (DIPE)	ND	2.0
ethyl tert-butyl ether (ETBE)	ND	2.0
tert-amyl methyl ether (TAME)	ND	2.0

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.7	104	70 – 130
toluene-d <sub>8</sub> (20)	19.9	99.5	70 – 130
4-bromofluorobenzene (20)	19.8	99.0	70 – 130

Date Sampled: 02/08/05	Date Analyzed: 02/09/05	QC Batch #: 5299
Date Received: 02/09/05	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28210	B-121 @ 26.0'	dichlorodifluoromethane	ND	2.0
		chloromethane	ND	2.0
		vinyl chloride	ND	2.0
		chloroethane	ND	2.0
		bromomethane	ND	2.0
		trichlorofluoromethane	ND	2.0
		1,1-dichloroethene (1,1-DCE)	ND	2.0
		methylene chloride	ND	2.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	2.0
		1,1-dichloroethane (1,1-DCA)	ND	2.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	2.0
		2,2-dichloropropane	ND	2.0
		chloroform (THM1)	ND	2.0
		bromochloromethane	ND	2.0
		1,1,1-trichloroethane (TCA)	ND	2.0
		1,2-dichloroethane (EDC)	ND	2.0
		1,1-dichloropropene	ND	2.0
		carbon tetrachloride	ND	2.0
		benzene	ND	2.0
		trichloroethene (TCE)	ND	2.0
		1,2-dichloropropane (DCP)	ND	2.0
		dibromomethane	ND	2.0
		bromodichloromethane (THM2)	ND	2.0
		cis-1,3-dichloropropene	ND	2.0
		toluene	ND	2.0
		1,1,2-trichloroethane	ND	2.0
		1,3-dichloropropane	ND	2.0
		dibromochloromethane (THM3)	ND	2.0
		tetrachloroethene (PCE)	ND	2.0
		1,2-dibromoethane (EDB)	ND	2.0
		chlorobenzene	ND	2.0
		1,1,1,2-tetrachloroethane	ND	2.0
		ethyl benzene	ND	2.0
		m,p-xylene	ND	2.0
		styrene	ND	2.0
		o-xylene	ND	2.0
		bromoform (THM4)	ND	2.0
		1,1,2,2-tetrachloroethane	ND	2.0



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28210	B-121 @ 26.0'	isopropyl benzene	ND	2.0
		1,2,3-trichloropropane	ND	2.0
		bromobenzene	ND	2.0
		n-propyl benzene	ND	2.0
		2-chlorotoluene	ND	2.0
		4-chlorotoluene	ND	2.0
		1,3,5-trimethylbenzene	ND	2.0
		tert-butylbenzene	ND	2.0
		1,2,4-trimethylbenzene	ND	2.0
		sec-butylbenzene	ND	2.0
		1,3-dichlorobenzene	ND	2.0
		1,4-dichlorobenzene	ND	2.0
		1,2-dichlorobenzene	ND	2.0
		p-isopropyltoluene	ND	2.0
		n-butylbenzene	ND	2.0
		1,2,4-trichlorobenzene	ND	2.0
		naphthalene	ND	2.0
		hexachlorobutadiene	ND	2.0
		1,2,3-trichlorobenzene	ND	2.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	50
methyl tert-butyl ether (MTBE)	ND	2.0
di-isopropyl ether (DIPE)	ND	2.0
ethyl tert-butyl ether (ETBE)	ND	2.0
tert-amyl methyl ether (TAME)	ND	2.0

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	21.4	107	70 – 130
toluene-d <sub>8</sub> (20)	20.0	100	70 – 130
4-bromofluorobenzene (20)	19.7	98.5	70 – 130

Date Sampled: 02/08/05	Date Analyzed: 02/09/05	QC Batch #: 5299
Date Received: 02/09/05	Method: EPA 8260B	



# LABORATORY

## QUALITY ASSURANCE REPORT

QC Batch #: 5280

Lab Project #: 5020903

Sample ID	Compound	Result (ug/L)
MB	TPH/Gas	ND
MB	MTBE	ND
MB	Benzene	ND
MB	Toluene	ND
MB	Ethyl Benzene	ND
MB	Xylenes	ND

Sample #	Sample ID	Compound	Result (ug/L)	Spike Level	% Recv.
28059	CMS	TPH/Gas		NS	
	CMS	Benzene	10.4	10.0	104
	CMS	Toluene	10.6	10.0	106
	CMS	Ethyl Benzene	11.2	10.0	112
	CMS	Xylenes	33.1	30.0	110

Sample #	Sample ID	Compound	Result (ug/L)	Spike Level	% Recv.	RPD
28059	CMSD	TPH/Gas		NS		
	CMSD	Benzene	10.3	10.0	103	0.83
	CMSD	Toluene	10.3	10.0	103	2.3
	CMSD	Ethyl Benzene	10.6	10.0	106	6.4
	CMSD	Xylenes	31.5	30.0	105	5.1

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery



QC Batch #: 5297

Lab Project #: 5020903

Sample ID	Compound Name	Result (ug/L)
MB	1,1-dichloroethene	ND
MB	benzene	ND
MB	trichloroethene	ND
MB	toluene	ND
MB	chlorobenzene	ND

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.9	105	70 – 130
toluene-d <sub>8</sub> (20)	20.3	102	70 – 130
4-bromofluorobenzene (20)	18.9	94.5	70 – 130

Sample #	Sample ID	Compound Name	Result (ug/L)	Spike Level	% Recv.
28186	CMS	1,1-dichloroethene	25.4	25.0	102
	CMS	benzene	46.0	25.0	84.8
	CMS	trichloroethene	19.7	25.0	78.8
	CMS	toluene	24.8	25.0	94.0
	CMS	chlorobenzene	23.4	25.0	93.6

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.0	100	70 – 130
toluene-d <sub>8</sub> (20)	20.1	101	70 – 130
4-bromofluorobenzene (20)	19.6	98.0	70 – 130



Sample #	Sample ID	Compound Name	Result (ug/L)	Spike Level	% Recv.	RPD
28186	CMSD	1,1-dichloroethene	27.7	25.0	111	8.7
	CMSD	benzene	46.4	25.0	86.4	1.9
	CMSD	trichloroethene	20.0	25.0	80.0	1.5
	CMSD	toluene	25.3	25.0	96.0	2.1
	CMSD	chlorobenzene	24.8	25.0	99.2	5.8

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.6	98.0	70 – 130
toluene-d <sub>8</sub> (20)	19.5	97.5	70 – 130
4-bromofluorobenzene (20)	19.6	98.0	70 – 130

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery

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QC Batch #: 5289

Lab Project #: 5020903

Sample ID	Compound	Result (mg/kg)
MB	TPH/Gas	ND
MB	MTBE	ND
MB	Benzene	ND
MB	Toluene	ND
MB	Ethyl Benzene	ND
MB	Xylenes	ND

Sample ID	Compound	Result (mg/kg)	Spike Level	% Recv.
LCS	TPH/Gas		NS	
LCS	Benzene	0.113	0.100	113
LCS	Toluene	0.114	0.100	114
LCS	Ethyl Benzene	0.118	0.100	118
LCS	Xylenes	0.352	0.300	117

Sample ID	Compound	Result (mg/kg)	Spike Level	% Recv.	RPD
LCSD	TPH/Gas		NS		
LCSD	Benzene	0.101	0.100	101	11
LCSD	Toluene	0.103	0.100	103	10
LCSD	Ethyl Benzene	0.105	0.100	105	12
LCSD	Xylenes	0.313	0.300	104	12

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery



QC Batch #: 5299

Lab Project #: 5020903

Sample ID	Compound Name	Result (ug/kg)
MB	1,1-dichloroethene	ND
MB	benzene	ND
MB	trichloroethene	ND
MB	toluene	ND
MB	chlorobenzene	ND

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.4	102	70 – 130
toluene-d <sub>8</sub> (20)	19.8	99.0	70 – 130
4-bromofluorobenzene (20)	19.8	99.0	70 – 130

Sample ID	Compound Name	Result (ug/kg)	Spike Level	% Recv.
LCS	1,1-dichloroethene	27.4	25.0	110
LCS	benzene	24.7	25.0	98.8
LCS	trichloroethene	22.9	25.0	91.6
LCS	toluene	24.1	25.0	96.4
LCS	chlorobenzene	25.1	25.0	100

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.3	102	70 – 130
toluene-d <sub>8</sub> (20)	19.7	98.5	70 – 130
4-bromofluorobenzene (20)	19.4	97.0	70 – 130



Sample ID	Compound Name	Result (ug/kg)	Spike Level	% Recv.	RPD
LCSD	1,1-dichloroethene	28.6	25.0	114	4.3
LCSD	benzene	25.3	25.0	101	2.4
LCSD	trichloroethene	23.5	25.0	94.0	2.6
LCSD	toluene	24.6	25.0	98.4	2.1
LCSD	chlorobenzene	25.4	25.0	102	1.2

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.2	101	70 – 130
toluene-d <sub>8</sub> (20)	20.2	101	70 – 130
4-bromofluorobenzene (20)	19.5	97.5	70 – 130

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; No Recovery

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# CHAIN OF CUSTODY

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COMPANY NAME: <b>SCS ENGINEERS</b>	CONTACT: <b>John Ridder</b>
ADDRESS: <b>3645 WESTWIND BOULEVARD</b>	COMPANY NAME: <b>4660 HESSEL RD</b>
CONTACT: <b>Steve Kustritz</b>	ADDRESS: <b>SEBASTIAN POL CA</b>
PHONE#: <b>(707) 546-9461</b>	PHONE#: <b>(707) 823 - 1976</b>
FAX #: <b>(707) 544-5769</b>	FAX #: <b></b>

LAB PROJECT NUMBER: <b>SCS0903</b>	SCS ENGINEERS PROJECT NAME: <b>HESSEL RD</b>
SCS ENGINEERS PROJECT NUMBER: <b>01203317.05</b>	GEOTRACKER EDF: <b>XY-N</b>
GLOBAL ID: <b>609700318</b>	
SAME DAY	24 HOURS
48 HOURS	72 HOURS
5 DAYS	NORMAL <input checked="" type="checkbox"/>

PAGE 1 of 1

ITEM	CLIENT SAMPLE I.D.	DATE SAMPLED	TIME	MATRIX	#	CONT.	PRESV.	YES/NO	COMMENTS	LAB SAMPLE #
1	B-121-1425.0'	8/22/93	10:45	2	4		X	X		18206
2	B-121-1425.0'	8/22/93	10:45	2	4		X	X		18207
3	B-121-1425.0'	8/22/93	11:00	501C	1		X			18208
4	B-121-1425.0'	8/22/93	11:45	501C	1		X			18209
5	B-121-1425.0'	8/22/93	12:45	501C	1		X			18210
6	B-121-1425.0'	8/22/93	14:15	501C	3		X		RJN #1 F18207	28211
7									(#1 Brownish)	
8									#2	
9									#3	
10									#4	
11										

RELINQUISHED BY: <u>John Knott</u>	DATE: <b>9/23/05</b>	TIME: <b>9:55</b>	RECEIVED BY LABORATORY:
RECEIVED BY:	DATE:	TIME:	<u>J. Knott</u>
RELINQUISHED BY:	DATE:	TIME:	<u>J. Knott</u>
RECEIVED BY:	DATE:	TIME:	SIGNATURE
			DATE <b>2-9-05</b> TIME <b>9:55</b>



Report Date: February 23, 2005

Stephen Knuttel  
SCS Engineers  
3645 Westwind Blvd.  
Santa Rosa, CA 95403

## LABORATORY REPORT

Project Name: **Hessel Rd.** **01203317.00**

Lab Project Number: **5021003**

This 19 page report of analytical data has been reviewed and approved for release.

Mark A. Valentini, Ph.D.  
Laboratory Director



## TPH Gasoline in Soil

Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
28258	B-122@ 10.5'	TPH/Gasoline	1,700	25

Date Sampled: 02/09/05	Date Analyzed: 02/15/05	QC Batch #: 5289
Date Received: 02/10/05	Method: EPA 8015M	

Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
28260	B-122@ 16.0'	TPH/Gasoline	ND	1.0

Date Sampled: 02/09/05	Date Analyzed: 02/16/05	QC Batch #: 5289
Date Received: 02/10/05	Method: EPA 8015M	

Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
28261	B-122@ 31.0'	TPH/Gasoline	ND	1.0

Date Sampled: 02/09/05	Date Analyzed: 02/15/05	QC Batch #: 5289
Date Received: 02/10/05	Method: EPA 8015M	



## Volatile Hydrocarbons by GC/MS in Soil

Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28258	B-122@ 10.5'	dichlorodifluoromethane	ND	500
		chloromethane	ND	500
		vinyl chloride	ND	500
		chloroethane	ND	500
		bromomethane	ND	500
		trichlorofluoromethane	ND	500
		1,1-dichloroethene (1,1-DCE)	ND	500
		methylene chloride	ND	500
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	500
		1,1-dichloroethane (1,1-DCA)	ND	500
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	500
		2,2-dichloropropane	ND	500
		chloroform (THM1)	ND	500
		bromoform (THM2)	ND	500
		1,1,1-trichloroethane (TCA)	ND	500
		1,2-dichloroethane (EDC)	ND	500
		1,1-dichloropropene	ND	500
		carbon tetrachloride	ND	500
		benzene	7,300	500
		trichloroethene (TCE)	ND	500
		1,2-dichloropropane (DCP)	ND	500
		dibromomethane	ND	500
		bromodichloromethane (THM2)	ND	500
		cis-1,3-dichloropropene	ND	500
		toluene	52,000	500
		1,1,2-trichloroethane	ND	500
		1,3-dichloropropane	ND	500
		dibromochloromethane (THM3)	ND	500
		tetrachloroethene (PCE)	ND	500
		1,2-dibromoethane (EDB)	ND	500
		chlorobenzene	ND	500
		1,1,1,2-tetrachloroethane	ND	500
		ethyl benzene	19,000	500
		m,p-xylene	81,000	500
		styrene	ND	500
		o-xylene	28,000	500
		bromoform (THM4)	ND	500
		1,1,2,2-tetrachloroethane	ND	500



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28258	B-122@ 10.5'	isopropyl benzene	1,300	500
		1,2,3-trichloropropane	ND	500
		bromobenzene	ND	500
		n-propyl benzene	6,700	500
		2-chlorotoluene	ND	500
		4-chlorotoluene	ND	500
		1,3,5-trimethylbenzene	17,000	500
		tert-butylbenzene	ND	500
		1,2,4-trimethylbenzene	62,000	500
		sec-butylbenzene	710	500
		1,3-dichlorobenzene	ND	500
		1,4-dichlorobenzene	ND	500
		1,2-dichlorobenzene	ND	500
		p-isopropyltoluene	ND	500
		n-butylbenzene	5,000	500
		1,2,4-trichlorobenzene	ND	500
		naphthalene	9,900	500
		hexachlorobutadiene	ND	500
		1,2,3-trichlorobenzene	ND	500

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25,000
methyl tert-butyl ether (MTBE)	ND	500
di-isopropyl ether (DIPE)	ND	500
ethyl tert-butyl ether (ETBE)	ND	500
tert-amyl methyl ether (TAME)	ND	500

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	18.8	94.0	70 – 130
toluene-d <sub>8</sub> (20)	20.0	100	70 – 130
4-bromofluorobenzene (20)	20.5	103	70 – 130

Date Sampled: 02/09/05	Date Analyzed: 02/15/05	QC Batch #: 5311
Date Received: 02/10/05	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28260	B-122@ 16.0'	dichlorodifluoromethane	ND	2.0
		chloromethane	ND	2.0
		vinyl chloride	ND	2.0
		chloroethane	ND	2.0
		bromomethane	ND	2.0
		trichlorofluoromethane	ND	2.0
		1,1-dichloroethene (1,1-DCE)	ND	2.0
		methylene chloride	ND	2.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	2.0
		1,1-dichloroethane (1,1-DCA)	ND	2.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	2.0
		2,2-dichloropropane	ND	2.0
		chloroform (THM1)	ND	2.0
		bromochloromethane	ND	2.0
		1,1,1-trichloroethane (TCA)	ND	2.0
		1,2-dichloroethane (EDC)	5.2	2.0
		1,1-dichloropropene	ND	2.0
		carbon tetrachloride	ND	2.0
		benzene	54	2.0
		trichloroethene (TCE)	ND	2.0
		1,2-dichloropropane (DCP)	ND	2.0
		dibromomethane	ND	2.0
		bromodichloromethane (THM2)	ND	2.0
		cis-1,3-dichloropropene	ND	2.0
		toluene	80	2.0
		1,1,2-trichloroethane	ND	2.0
		1,3-dichloropropane	ND	2.0
		dibromochloromethane (THM3)	ND	2.0
		tetrachloroethene (PCE)	ND	2.0
		1,2-dibromoethane (EDB)	ND	2.0
		chlorobenzene	ND	2.0
		1,1,1,2-tetrachloroethane	ND	2.0
		ethyl benzene	28	2.0
		m,p-xylene	120	2.0
		styrene	ND	2.0
		o-xylene	37	2.0
		bromoform (THM4)	ND	2.0
		1,1,2,2-tetrachloroethane	ND	2.0



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28260	B-122@ 16.0'	isopropyl benzene	ND	2.0
		1,2,3-trichloropropane	ND	2.0
		bromobenzene	ND	2.0
		n-propyl benzene	9.2	2.0
		2-chlorotoluene	ND	2.0
		4-chlorotoluene	ND	2.0
		1,3,5-trimethylbenzene	23	2.0
		tert-butylbenzene	ND	2.0
		1,2,4-trimethylbenzene	82	2.0
		sec-butylbenzene	ND	2.0
		1,3-dichlorobenzene	ND	2.0
		1,4-dichlorobenzene	ND	2.0
		1,2-dichlorobenzene	ND	2.0
		p-isopropyltoluene	ND	2.0
		n-butylbenzene	7.3	2.0
		1,2,4-trichlorobenzene	ND	2.0
		naphthalene	9.6	2.0
		hexachlorobutadiene	ND	2.0
		1,2,3-trichlorobenzene	ND	2.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	50
methyl tert-butyl ether (MTBE)	ND	2.0
di-isopropyl ether (DIPE)	ND	2.0
ethyl tert-butyl ether (ETBE)	ND	2.0
tert-amyl methyl ether (TAME)	ND	2.0

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.6	98.0	70 – 130
toluene-d <sub>8</sub> (20)	20.3	102	70 – 130
4-bromofluorobenzene (20)	19.6	98.0	70 – 130

Date Sampled: 02/09/05	Date Analyzed: 02/15/05	QC Batch #: 5311
Date Received: 02/10/05	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28261	B-122@ 31.0'	dichlorodifluoromethane	ND	2.0
		chloromethane	ND	2.0
		vinyl chloride	ND	2.0
		chloroethane	ND	2.0
		bromomethane	ND	2.0
		trichlorofluoromethane	ND	2.0
		1,1-dichloroethene (1,1-DCE)	ND	2.0
		methylene chloride	ND	2.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	2.0
		1,1-dichloroethane (1,1-DCA)	ND	2.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	2.0
		2,2-dichloropropane	ND	2.0
		chloroform (THM1)	ND	2.0
		bromoform (THM2)	ND	2.0
		bromochloromethane	ND	2.0
		1,1,1-trichloroethane (TCA)	ND	2.0
		1,2-dichloroethane (EDC)	ND	2.0
		1,1-dichloropropene	ND	2.0
		carbon tetrachloride	ND	2.0
		benzene	ND	2.0
		trichloroethene (TCE)	ND	2.0
		1,2-dichloropropane (DCP)	ND	2.0
		dibromomethane	ND	2.0
		bromodichloromethane (THM3)	ND	2.0
		cis-1,3-dichloropropene	ND	2.0
		toluene	4.0	2.0
		1,1,2-trichloroethane	ND	2.0
		1,3-dichloropropane	ND	2.0
		dibromochloromethane (THM4)	ND	2.0
		tetrachloroethene (PCE)	ND	2.0
		1,2-dibromoethane (EDB)	ND	2.0
		chlorobenzene	ND	2.0
		1,1,1,2-tetrachloroethane	ND	2.0
		ethyl benzene	1.8	2.0
		m,p-xylene	7.2	2.0
		styrene	ND	2.0
		o-xylene	2.6	2.0
		bromoform (THM4)	ND	2.0
		1,1,2,2-tetrachloroethane	ND	2.0



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28261	B-122@ 31.0'	isopropyl benzene	ND	2.0
		1,2,3-trichloropropane	ND	2.0
		bromobenzene	ND	2.0
		n-propyl benzene	ND	2.0
		2-chlorotoluene	ND	2.0
		4-chlorotoluene	ND	2.0
		1,3,5-trimethylbenzene	2.2	2.0
		tert-butylbenzene	ND	2.0
		1,2,4-trimethylbenzene	7.8	2.0
		sec-butylbenzene	ND	2.0
		1,3-dichlorobenzene	ND	2.0
		1,4-dichlorobenzene	ND	2.0
		1,2-dichlorobenzene	ND	2.0
		p-isopropyltoluene	ND	2.0
		n-butylbenzene	ND	2.0
		1,2,4-trichlorobenzene	ND	2.0
		naphthalene	ND	2.0
		hexachlorobutadiene	ND	2.0
		1,2,3-trichlorobenzene	ND	2.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	50
methyl tert-butyl ether (MTBE)	ND	2.0
di-isopropyl ether (DIPE)	ND	2.0
ethyl tert-butyl ether (ETBE)	ND	2.0
tert-amyl methyl ether (TAME)	ND	2.0

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.6	98.0	70 – 130
toluene-d <sub>8</sub> (20)	20.3	102	70 – 130
4-bromofluorobenzene (20)	19.2	96.0	70 – 130

Date Sampled: 02/09/05	Date Analyzed: 02/15/05	QC Batch #: 5311
Date Received: 02/10/05	Method: EPA 8260B	



### TPH Gasoline in Water

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
28259	B-122-W@ 10.0'	TPH/Gasoline	58,000	2,500

Date Sampled: 02/09/05	Date Analyzed: 02/14/05	QC Batch #: 5280
Date Received: 02/09/05	Method: EPA 5030/8015M	

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
28262	B-122@ 35.0'	TPH/Gasoline	670	50

Date Sampled: 02/09/05	Date Analyzed: 02/14/05	QC Batch #: 5280
Date Received: 02/09/05	Method: EPA 5030/8015M	

### TPH Diesel & Motor Oil in Water

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
28259	B-122-W@ 10.0'	TPH/Diesel Motor Oil	81,000 (1) ND	2,500 10,000

Date Sampled: 02/09/05	Date Extracted: 02/18/05	QC Batch #: 5318
Date Received: 02/10/05	Date Analyzed: 02/18/05	Method: EPA 3510/8015M

(1) Floating product was present. The sample chromatogram does not exhibit a pattern characteristic of diesel. Higher boiling point constituents of gasoline are clearly present.



## Volatile Hydrocarbons by GC/MS in Water

Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
28259	B-122-W@ 10.0'	dichlorodifluoromethane	ND	100
		chloromethane	ND	100
		vinyl chloride	ND	100
		chloroethane	ND	100
		bromomethane	ND	100
		trichlorofluoromethane	ND	100
		1,1-dichloroethene (1,1-DCE)	ND	100
		methylene chloride	ND	100
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	100
		1,1-dichloroethane (1,1-DCA)	ND	100
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	100
		2,2-dichloropropane	ND	100
		chloroform (THM1)	ND	100
		bromoform (THM2)	ND	100
		1,1,1-trichloroethane (TCA)	ND	100
		1,2-dichloroethane (EDC)	ND	100
		1,1-dichloropropene	ND	100
		carbon tetrachloride	ND	100
		benzene	6,900	100
		trichloroethene (TCE)	ND	100
		1,2-dichloropropane (DCP)	ND	100
		dibromomethane	ND	100
		bromodichloromethane (THM2)	ND	100
		cis-1,3-dichloropropene	ND	100
		toluene	20,000	200
		1,1,2-trichloroethane	ND	100
		1,3-dichloropropane	ND	100
		dibromochloromethane (THM3)	ND	100
		tetrachloroethene (PCE)	ND	100
		1,2-dibromoethane (EDB)	ND	100
		chlorobenzene	ND	100
		1,1,1,2-tetrachloroethane	ND	100
		ethyl benzene	2,000	100
		m,p-xylene	8,500	100
		styrene	ND	100
		o-xylene	3,400	100
		bromoform (THM4)	ND	100
		1,1,2,2-tetrachloroethane	ND	100



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
28259	B-122-W@ 10.0'	isopropyl benzene	ND	100
		1,2,3-trichloropropane	ND	100
		bromobenzene	ND	100
		n-propyl benzene	290	100
		2-chlorotoluene	ND	100
		4-chlorotoluene	ND	100
		1,3,5-trimethylbenzene	810	100
		tert-butylbenzene	ND	100
		1,2,4-trimethylbenzene	3,000	100
		sec-butylbenzene	ND	100
		1,3-dichlorobenzene	ND	100
		1,4-dichlorobenzene	ND	100
		1,2-dichlorobenzene	ND	100
		p-isopropyltoluene	ND	100
		n-butylbenzene	ND	100
		1,2,4-trichlorobenzene	ND	100
		naphthalene	1,100	100
		hexachlorobutadiene	ND	100
		1,2,3-trichlorobenzene	ND	100

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	2,500
methyl tert-butyl ether (MTBE)	ND	100
di-isopropyl ether (DIPE)	ND	100
ethyl tert-butyl ether (ETBE)	ND	100
tert-amyl methyl ether (TAME)	ND	100

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	18.6	93.0	70 – 130
toluene-d <sub>8</sub> (20)	20.5	103	70 – 130
4-bromofluorobenzene (20)	20.1	101	70 – 130

Date Sampled: 02/09/05	Date Analyzed: 02/10/05, 02/11/05	QC Batch #: 5297
Date Received: 02/10/05	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
28262	B-122@ 35.0'	dichlorodifluoromethane	ND	1.0
		chloromethane	ND	1.0
		vinyl chloride	ND	1.0
		chloroethane	ND	1.0
		bromomethane	ND	1.0
		trichlorofluoromethane	ND	1.0
		1,1-dichloroethene (1,1-DCE)	ND	1.0
		methylene chloride	ND	1.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	1.0
		1,1-dichloroethane (1,1-DCA)	ND	1.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	1.0
		2,2-dichloropropane	ND	1.0
		chloroform (THM1)	ND	1.0
		bromochloromethane	ND	1.0
		1,1,1-trichloroethane (TCA)	ND	1.0
		1,2-dichloroethane (EDC)	ND	1.0
		1,1-dichloropropene	ND	1.0
		carbon tetrachloride	ND	1.0
		benzene	2.8	1.0
		trichloroethene (TCE)	ND	1.0
		1,2-dichloropropane (DCP)	ND	1.0
		dibromomethane	ND	1.0
		bromodichloromethane (THM2)	ND	1.0
		cis-1,3-dichloropropene	ND	1.0
		toluene	31	1.0
		1,1,2-trichloroethane	ND	1.0
		1,3-dichloropropane	ND	1.0
		dibromochloromethane (THM3)	ND	1.0
		tetrachloroethene (PCE)	ND	1.0
		1,2-dibromoethane (EDB)	ND	1.0
		chlorobenzene	ND	1.0
		1,1,1,2-tetrachloroethane	ND	1.0
		ethyl benzene	10	1.0
		m,p-xylene	45	1.0
		styrene	ND	1.0
		o-xylene	16	1.0
		bromoform (THM4)	ND	1.0
		1,1,2,2-tetrachloroethane	ND	1.0



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
28262	B-122@ 35.0'	isopropyl benzene	ND	1.0
		1,2,3-trichloropropane	ND	1.0
		bromobenzene	ND	1.0
		n-propyl benzene	3.9	1.0
		2-chlorotoluene	ND	1.0
		4-chlorotoluene	ND	1.0
		1,3,5-trimethylbenzene	10	1.0
		tert-butylbenzene	ND	1.0
		1,2,4-trimethylbenzene	38	1.0
		sec-butylbenzene	ND	1.0
		1,3-dichlorobenzene	ND	1.0
		1,4-dichlorobenzene	ND	1.0
		1,2-dichlorobenzene	ND	1.0
		p-isopropyltoluene	ND	1.0
		n-butylbenzene	2.7	1.0
		1,2,4-trichlorobenzene	ND	1.0
		naphthalene	6.9	1.0
		hexachlorobutadiene	ND	1.0
		1,2,3-trichlorobenzene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	ND	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.6	98.0	70 – 130
toluene-d <sub>8</sub> (20)	19.9	99.5	70 – 130
4-bromofluorobenzene (20)	20.2	101	70 – 130

Date Sampled: 02/09/05	Date Analyzed: 02/10/05	QC Batch #: 5297
Date Received: 02/10/05	Method: EPA 8260B	



# LABORATORY

## QUALITY ASSURANCE REPORT

QC Batch #: 5289

Lab Project #: 5021003

Sample ID	Compound	Result (mg/kg)
MB	TPH/Gas	ND
MB	MTBE	ND
MB	Benzene	ND
MB	Toluene	ND
MB	Ethyl Benzene	ND
MB	Xylenes	ND

Sample ID	Compound	Result (mg/kg)	Spike Level	% Recv.
LCS	TPH/Gas		NS	
LCS	Benzene	0.113	0.100	113
LCS	Toluene	0.114	0.100	114
LCS	Ethyl Benzene	0.118	0.100	118
LCS	Xylenes	0.352	0.300	117

Sample ID	Compound	Result (mg/kg)	Spike Level	% Recv.	RPD
LCSD	TPH/Gas		NS		
LCSD	Benzene	0.101	0.100	101	11
LCSD	Toluene	0.103	0.100	103	10
LCSD	Ethyl Benzene	0.105	0.100	105	12
LCSD	Xylenes	0.313	0.300	104	12

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery



QC Batch #: 5297

Lab Project #: 5021003

Sample ID	Compound Name	Result (ug/kg)
MB	1,1-dichloroethene	ND
MB	benzene	ND
MB	trichloroethene	ND
MB	toluene	ND
MB	chlorobenzene	ND

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.9	105	70 – 130
toluene-d <sub>8</sub> (20)	20.3	102	70 – 130
4-bromofluorobenzene (20)	18.9	94.5	70 – 130

Sample #	Sample ID	Compound Name	Result (ug/kg)	Spike Level	% Recv.
28186	CMS	1,1-dichloroethene	25.4	25.0	102
	CMS	benzene	46.0	25.0	84.8
	CMS	trichloroethene	19.7	25.0	78.8
	CMS	toluene	24.8	25.0	94.0
	CMS	chlorobenzene	23.4	25.0	93.6

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.0	100	70 – 130
toluene-d <sub>8</sub> (20)	20.1	101	70 – 130
4-bromofluorobenzene (20)	19.6	98.0	70 – 130



Sample #	Sample ID	Compound Name	Result (ug/kg)	Spike Level	% Recv.	RPD
28186	CMSD	1,1-dichloroethene	27.7	25.0	111	8.7
	CMSD	benzene	46.4	25.0	86.4	1.9
	CMSD	trichloroethene	20.0	25.0	80.0	1.5
	CMSD	toluene	25.3	25.0	96.0	2.1
	CMSD	chlorobenzene	24.8	25.0	99.2	5.8

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.6	98.0	70 – 130
toluene-d <sub>8</sub> (20)	19.5	97.5	70 – 130
4-bromofluorobenzene (20)	19.6	98.0	70 – 130

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; No Recovery

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QC Batch #: 5280

Lab Project #: 5021003

Sample ID	Compound	Result (ug/L)
MB	TPH/Gas	ND
MB	MTBE	ND
MB	Benzene	ND
MB	Toluene	ND
MB	Ethyl Benzene	ND
MB	Xylenes	ND

Sample #	Sample ID	Compound	Result (ug/L)	Spike Level	% Recv.
28059	CMS	TPH/Gas		NS	
	CMS	Benzene	10.4	10.0	104
	CMS	Toluene	10.6	10.0	106
	CMS	Ethyl Benzene	11.2	10.0	112
	CMS	Xylenes	33.1	30.0	110

Sample #	Sample ID	Compound	Result (ug/L)	Spike Level	% Recv.	RPD
28059	CMSD	TPH/Gas		NS		
	CMSD	Benzene	10.3	10.0	103	0.83
	CMSD	Toluene	10.3	10.0	103	2.3
	CMSD	Ethyl Benzene	10.6	10.0	106	6.4
	CMSD	Xylenes	31.5	30.0	105	5.1

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery

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QC Batch #: 5318

Lab Project #: 5021003

Sample ID	Compound	Result (ug/L)
MB	TPH/Diesel	ND

Sample ID	Compound	Result (ug/L)	Spike Level	% Recv.
LCS	TPH/Diesel	1,920	2,730	70.3

Sample ID	Compound	Result (ug/L)	Spike Level	% Recv.	RPD
LCSD	TPH/Diesel	2,200	2,730	80.5	13

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery

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QC Batch #: 5311

Lab Project #: 5021003

Sample ID	Compound Name	Result (ug/L)
MB	1,1-dichloroethene	ND
MB	benzene	ND
MB	trichloroethene	ND
MB	toluene	ND
MB	chlorobenzene	ND

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	21.1	106	70 – 130
toluene-d <sub>8</sub> (20)	20.1	101	70 – 130
4-bromofluorobenzene (20)	20.0	100	70 – 130

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Sample ID	Compound Name	Result (ug/L)	Spike Level	% Recv.
LCS	1,1-dichloroethene	25.5	25.0	102
LCS	benzene	23.3	25.0	93.2
LCS	trichloroethene	19.2	25.0	76.8
LCS	toluene	23.9	25.0	95.6
LCS	chlorobenzene	23.9	25.0	95.6

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.3	96.5	70 – 130
toluene-d <sub>8</sub> (20)	20.2	101	70 – 130
4-bromofluorobenzene (20)	19.2	96.0	70 – 130

Sample ID	Compound Name	Result (ug/L)	Spike Level	% Recv.	RPD
LCSD	1,1-dichloroethene	25.5	25.0	102	0.0
LCSD	benzene	23.3	25.0	93.2	0.0
LCSD	trichloroethene	19.4	25.0	77.6	1.0
LCSD	toluene	23.4	25.0	93.6	2.1
LCSD	chlorobenzene	24.7	25.0	98.8	3.3

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.3	96.5	70 – 130
toluene-d <sub>8</sub> (20)	20.0	100	70 – 130
4-bromofluorobenzene (20)	19.6	98.0	70 – 130

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery



# **CHAIN OF CUSTODY**

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Company Information		Billing Information	
COMPANY NAME:	<u>SCS ENGINEERS</u>	CONTACT:	<u>Tolman Ridge</u>
ADDRESS:	<u>3645 WESTWIND BOULEVARD</u>	COMPANY NAME:	<u>YCCO MASS CO</u>
	<u>SANTA ROSA, CA 95403</u>	ADDRESS:	<u>5 CIRASTROPOL CA</u>
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PHONE#:	<u>(707) 546-9461</u>	PHONE#:	<u>707 823 - 1976</u>
FAX #:	<u></u>	FAX #:	<u></u>

<b>LAB PROJECT NUMBER:</b>	5021003		
<b>SCS ENGINEERS PROJECT NAME:</b>	HESSEL Q9		
<b>SCS ENGINEERS PROJECT NUMBER:</b>	01203317.03		
<b>GEO-TRACKER EDF:</b> <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <b>GLOBAL ID:</b> <u>To 60 9 7-eo31e</u>			
<b>MOBILE LAB</b>	SAME DAY	24 HOURS	72 HOURS
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>COOLER TEMPERATURE</b>	<u>Blue Side °C</u>		
<b>COC</b>	<u> </u>		



Report Date: February 28, 2005

Stephen Knuttel  
SCS Engineers  
3645 Westwind Blvd.  
Santa Rosa, CA 95403

## LABORATORY REPORT

Project Name: **Hessel Rd.** **01203317.00**

Lab Project Number: **5020802**

This 23 page report of analytical data has been reviewed and approved for release.

Mark A. Valentini, Ph.D.  
Laboratory Director



## TPH Gasoline in Water

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Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
28186	B-120-W@ 5.0'	TPH/Gasoline	100	50

Date Sampled: 02/07/05	Date Analyzed: 02/08/05	QC Batch #: 5296
Date Received: 02/08/05	Method: EPA 5030/8015M	

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Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
28192	B-120-W@ 39.0'	TPH/Gasoline	210	50

Date Sampled: 02/07/05	Date Analyzed: 02/08/05	QC Batch #: 5296
Date Received: 02/08/05	Method: EPA 5030/8015M	



## Volatile Hydrocarbons by GC/MS in Water

Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
28186	B-120-W@ 5.0'	dichlorodifluoromethane	ND	1.0
		chloromethane	ND	1.0
		vinyl chloride	ND	1.0
		chloroethane	ND	1.0
		bromomethane	ND	1.0
		trichlorofluoromethane	ND	1.0
		1,1-dichloroethene (1,1-DCE)	ND	1.0
		methylene chloride	ND	1.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	1.0
		1,1-dichloroethane (1,1-DCA)	ND	1.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	1.0
		2,2-dichloropropane	ND	1.0
		chloroform (THM1)	ND	1.0
		bromoform (THM2)	ND	1.0
		1,1,1-trichloroethane (TCA)	ND	1.0
		1,2-dichloroethane (EDC)	2.8	1.0
		1,1-dichloropropene	ND	1.0
		carbon tetrachloride	ND	1.0
		benzene	25	1.0
		trichloroethene (TCE)	ND	1.0
		1,2-dichloropropane (DCP)	ND	1.0
		dibromomethane	ND	1.0
		bromodichloromethane (THM2)	ND	1.0
		cis-1,3-dichloropropene	ND	1.0
		toluene	1.3	1.0
		1,1,2-trichloroethane	ND	1.0
		1,3-dichloropropane	ND	1.0
		dibromochloromethane (THM3)	ND	1.0
		tetrachloroethene (PCE)	ND	1.0
		1,2-dibromoethane (EDB)	ND	1.0
		chlorobenzene	ND	1.0
		1,1,1,2-tetrachloroethane	ND	1.0
		ethyl benzene	ND	1.0
		m,p-xylene	ND	1.0
		styrene	ND	1.0
		o-xylene	ND	1.0
		bromoform (THM4)	ND	1.0
		1,1,2,2-tetrachloroethane	ND	1.0



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
28186	B-120-W@ 5.0'	isopropyl benzene	ND	1.0
		1,2,3-trichloropropane	ND	1.0
		bromobenzene	ND	1.0
		n-propyl benzene	ND	1.0
		2-chlorotoluene	ND	1.0
		4-chlorotoluene	ND	1.0
		1,3,5-trimethylbenzene	ND	1.0
		tert-butylbenzene	ND	1.0
		1,2,4-trimethylbenzene	ND	1.0
		sec-butylbenzene	ND	1.0
		1,3-dichlorobenzene	ND	1.0
		1,4-dichlorobenzene	ND	1.0
		1,2-dichlorobenzene	ND	1.0
		p-isopropyltoluene	ND	1.0
		n-butylbenzene	ND	1.0
		1,2,4-trichlorobenzene	ND	1.0
		naphthalene	1.0	1.0
		hexachlorobutadiene	ND	1.0
		1,2,3-trichlorobenzene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	ND	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.9	99.5	70 – 130
toluene-d <sub>8</sub> (20)	20.2	101	70 – 130
4-bromofluorobenzene (20)	19.6	98.0	70 – 130

Date Sampled: 02/07/05	Date Analyzed: 02/08/05	QC Batch #: 5297
Date Received: 02/08/05	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
28192	B-120-W@ 39.0'	dichlorodifluoromethane	ND	1.0
		chloromethane	ND	1.0
		vinyl chloride	ND	1.0
		chloroethane	ND	1.0
		bromomethane	ND	1.0
		trichlorofluoromethane	ND	1.0
		1,1-dichloroethene (1,1-DCE)	ND	1.0
		methylene chloride	ND	1.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	1.0
		1,1-dichloroethane (1,1-DCA)	ND	1.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	1.0
		2,2-dichloropropane	ND	1.0
		chloroform (THM1)	ND	1.0
		bromochloromethane	ND	1.0
		1,1,1-trichloroethane (TCA)	ND	1.0
		1,2-dichloroethane (EDC)	ND	1.0
		1,1-dichloropropene	ND	1.0
		carbon tetrachloride	ND	1.0
		benzene	24	1.0
		trichloroethene (TCE)	ND	1.0
		1,2-dichloropropane (DCP)	ND	1.0
		dibromomethane	ND	1.0
		bromodichloromethane (THM2)	ND	1.0
		cis-1,3-dichloropropene	ND	1.0
		toluene	1.3	1.0
		1,1,2-trichloroethane	ND	1.0
		1,3-dichloropropane	ND	1.0
		dibromochloromethane (THM3)	ND	1.0
		tetrachloroethene (PCE)	ND	1.0
		1,2-dibromoethane (EDB)	ND	1.0
		chlorobenzene	ND	1.0
		1,1,1,2-tetrachloroethane	ND	1.0
		ethyl benzene	5.0	1.0
		m,p-xylene	1.8	1.0
		styrene	ND	1.0
		o-xylene	ND	1.0
		bromoform (THM4)	ND	1.0
		1,1,2,2-tetrachloroethane	ND	1.0



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
28192	B-120-W@ 39.0'	isopropyl benzene	ND	1.0
		1,2,3-trichloropropane	ND	1.0
		bromobenzene	ND	1.0
		n-propyl benzene	ND	1.0
		2-chlorotoluene	ND	1.0
		4-chlorotoluene	ND	1.0
		1,3,5-trimethylbenzene	ND	1.0
		tert-butylbenzene	ND	1.0
		1,2,4-trimethylbenzene	1.2	1.0
		sec-butylbenzene	ND	1.0
		1,3-dichlorobenzene	ND	1.0
		1,4-dichlorobenzene	ND	1.0
		1,2-dichlorobenzene	ND	1.0
		p-isopropyltoluene	ND	1.0
		n-butylbenzene	ND	1.0
		1,2,4-trichlorobenzene	ND	1.0
		naphthalene	1.8	1.0
		hexachlorobutadiene	ND	1.0
		1,2,3-trichlorobenzene	ND	1.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	25
methyl tert-butyl ether (MTBE)	ND	1.0
di-isopropyl ether (DIPE)	ND	1.0
ethyl tert-butyl ether (ETBE)	ND	1.0
tert-amyl methyl ether (TAME)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.1	101	70 – 130
toluene-d <sub>8</sub> (20)	21.0	105	70 – 130
4-bromofluorobenzene (20)	19.3	96.5	70 – 130

Date Sampled: 02/07/05	Date Analyzed: 02/08/05	QC Batch #: 5297
Date Received: 02/08/05	Method: EPA 8260B	



## TPH Gasoline in Soil

Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
28187	B-120@ 16.0'	TPH/Gasoline	12	5.0

Date Sampled: 02/07/05	Date Analyzed: 02/08/05	QC Batch #: 5289
Date Received: 02/08/05	Method: EPA 8015M	

Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
28188	B-120@ 24.0'	TPH/Gasoline	ND	1.0

Date Sampled: 02/07/05	Date Analyzed: 02/08/05	QC Batch #: 5289
Date Received: 02/08/05	Method: EPA 8015M	

Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
28189	B-120@ 25.5'	TPH/Gasoline	ND	1.0

Date Sampled: 02/07/05	Date Analyzed: 02/08/05	QC Batch #: 5289
Date Received: 02/08/05	Method: EPA 8015M	

Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
28190	B-120@ 31.5'	TPH/Gasoline	ND	1.0

Date Sampled: 02/07/05	Date Analyzed: 02/08/05	QC Batch #: 5289
Date Received: 02/08/05	Method: EPA 8015M	

Lab #	Sample ID	Analysis	Result (mg/kg)	RDL (mg/kg)
28191	B-120@ 36.0'	TPH/Gasoline	ND	1.0

Date Sampled: 02/07/05	Date Analyzed: 02/08/05	QC Batch #: 5289
Date Received: 02/08/05	Method: EPA 8015M	



## Volatile Hydrocarbons by GC/MS in Soil

Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28187	B-120@ 16.0'	dichlorodifluoromethane	ND	2.0
		chloromethane	ND	2.0
		vinyl chloride	ND	2.0
		chloroethane	ND	2.0
		bromomethane	ND	2.0
		trichlorofluoromethane	ND	2.0
		1,1-dichloroethene (1,1-DCE)	ND	2.0
		methylene chloride	ND	2.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	2.0
		1,1-dichloroethane (1,1-DCA)	ND	2.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	2.0
		2,2-dichloropropane	ND	2.0
		chloroform (THM1)	ND	2.0
		bromoform (THM2)	ND	2.0
		1,1,1-trichloroethane (TCA)	ND	2.0
		1,2-dichloroethane (EDC)	ND	2.0
		1,1-dichloropropene	ND	2.0
		carbon tetrachloride	ND	2.0
		benzene	76	2.0
		trichloroethene (TCE)	ND	2.0
		1,2-dichloropropane (DCP)	ND	2.0
		dibromomethane	ND	2.0
		bromodichloromethane (THM2)	ND	2.0
		cis-1,3-dichloropropene	ND	2.0
		toluene	ND	2.0
		1,1,2-trichloroethane	ND	2.0
		1,3-dichloropropane	ND	2.0
		dibromochloromethane (THM3)	ND	2.0
		tetrachloroethene (PCE)	ND	2.0
		1,2-dibromoethane (EDB)	ND	2.0
		chlorobenzene	ND	2.0
		1,1,1,2-tetrachloroethane	ND	2.0
		ethyl benzene	15	2.0
		m,p-xylene	ND	2.0
		styrene	ND	2.0
		o-xylene	ND	2.0
		bromoform (THM4)	ND	2.0
		1,1,2,2-tetrachloroethane	ND	2.0



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28187	B-120@ 16.0'	isopropyl benzene	ND	2.0
		1,2,3-trichloropropane	ND	2.0
		bromobenzene	ND	2.0
		n-propyl benzene	ND	2.0
		2-chlorotoluene	ND	2.0
		4-chlorotoluene	ND	2.0
		1,3,5-trimethylbenzene	2.7	2.0
		tert-butylbenzene	ND	2.0
		1,2,4-trimethylbenzene	ND	2.0
		sec-butylbenzene	ND	2.0
		1,3-dichlorobenzene	ND	2.0
		1,4-dichlorobenzene	ND	2.0
		1,2-dichlorobenzene	ND	2.0
		p-isopropyltoluene	ND	2.0
		n-butylbenzene	ND	2.0
		1,2,4-trichlorobenzene	ND	2.0
		naphthalene	8.8	2.0
		hexachlorobutadiene	ND	2.0
		1,2,3-trichlorobenzene	ND	2.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	50
methyl tert-butyl ether (MTBE)	ND	2.0
di-isopropyl ether (DIPE)	ND	2.0
ethyl tert-butyl ether (ETBE)	ND	2.0
tert-amyl methyl ether (TAME)	ND	2.0

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.8	104	70 – 130
toluene-d <sub>8</sub> (20)	20.0	100	70 – 130
4-bromofluorobenzene (20)	19.7	98.5	70 – 130

Date Sampled: 02/07/05	Date Analyzed: 02/08/05, 02/09/05	QC Batch #: 5284
Date Received: 02/08/05	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28188	B-120@ 24.0'	dichlorodifluoromethane	ND	2.0
		chloromethane	ND	2.0
		vinyl chloride	ND	2.0
		chloroethane	ND	2.0
		bromomethane	ND	2.0
		trichlorofluoromethane	ND	2.0
		1,1-dichloroethene (1,1-DCE)	ND	2.0
		methylene chloride	ND	2.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	2.0
		1,1-dichloroethane (1,1-DCA)	ND	2.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	2.0
		2,2-dichloropropane	ND	2.0
		chloroform (THM1)	ND	2.0
		bromochloromethane	ND	2.0
		1,1,1-trichloroethane (TCA)	ND	2.0
		1,2-dichloroethane (EDC)	ND	2.0
		1,1-dichloropropene	ND	2.0
		carbon tetrachloride	ND	2.0
		benzene	3.2	2.0
		trichloroethene (TCE)	ND	2.0
		1,2-dichloropropane (DCP)	ND	2.0
		dibromomethane	ND	2.0
		bromodichloromethane (THM2)	ND	2.0
		cis-1,3-dichloropropene	ND	2.0
		toluene	ND	2.0
		1,1,2-trichloroethane	ND	2.0
		1,3-dichloropropane	ND	2.0
		dibromochloromethane (THM3)	ND	2.0
		tetrachloroethene (PCE)	ND	2.0
		1,2-dibromoethane (EDB)	ND	2.0
		chlorobenzene	ND	2.0
		1,1,1,2-tetrachloroethane	ND	2.0
		ethyl benzene	ND	2.0
		m,p-xylene	ND	2.0
		styrene	ND	2.0
		o-xylene	ND	2.0
		bromoform (THM4)	ND	2.0
		1,1,2,2-tetrachloroethane	ND	2.0



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28188	B-120@ 24.0'	isopropyl benzene	ND	2.0
		1,2,3-trichloropropane	ND	2.0
		bromobenzene	ND	2.0
		n-propyl benzene	ND	2.0
		2-chlorotoluene	ND	2.0
		4-chlorotoluene	ND	2.0
		1,3,5-trimethylbenzene	ND	2.0
		tert-butylbenzene	ND	2.0
		1,2,4-trimethylbenzene	ND	2.0
		sec-butylbenzene	ND	2.0
		1,3-dichlorobenzene	ND	2.0
		1,4-dichlorobenzene	ND	2.0
		1,2-dichlorobenzene	ND	2.0
		p-isopropyltoluene	ND	2.0
		n-butylbenzene	ND	2.0
		1,2,4-trichlorobenzene	ND	2.0
		naphthalene	ND	2.0
		hexachlorobutadiene	ND	2.0
		1,2,3-trichlorobenzene	ND	2.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	50
methyl tert-butyl ether (MTBE)	ND	2.0
di-isopropyl ether (DIPE)	ND	2.0
ethyl tert-butyl ether (ETBE)	ND	2.0
tert-amyl methyl ether (TAME)	ND	2.0

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	21.4	107	70 – 130
toluene-d <sub>8</sub> (20)	19.8	99.0	70 – 130
4-bromofluorobenzene (20)	19.4	97.0	70 – 130

Date Sampled: 02/07/05	Date Analyzed: 02/08/05, 02/09/05	QC Batch #: 5284
Date Received: 02/08/05	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28189	B-120@ 25.5'	dichlorodifluoromethane	ND	2.0
		chloromethane	ND	2.0
		vinyl chloride	ND	2.0
		chloroethane	ND	2.0
		bromomethane	ND	2.0
		trichlorofluoromethane	ND	2.0
		1,1-dichloroethene (1,1-DCE)	ND	2.0
		methylene chloride	ND	2.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	2.0
		1,1-dichloroethane (1,1-DCA)	ND	2.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	2.0
		2,2-dichloropropane	ND	2.0
		chloroform (THM1)	ND	2.0
		bromochloromethane	ND	2.0
		1,1,1-trichloroethane (TCA)	ND	2.0
		1,2-dichloroethane (EDC)	ND	2.0
		1,1-dichloropropene	ND	2.0
		carbon tetrachloride	ND	2.0
		benzene	ND	2.0
		trichloroethene (TCE)	ND	2.0
		1,2-dichloropropane (DCP)	ND	2.0
		dibromomethane	ND	2.0
		bromodichloromethane (THM2)	ND	2.0
		cis-1,3-dichloropropene	ND	2.0
		toluene	ND	2.0
		1,1,2-trichloroethane	ND	2.0
		1,3-dichloropropane	ND	2.0
		dibromochloromethane (THM3)	ND	2.0
		tetrachloroethene (PCE)	ND	2.0
		1,2-dibromoethane (EDB)	ND	2.0
		chlorobenzene	ND	2.0
		1,1,1,2-tetrachloroethane	ND	2.0
		ethyl benzene	ND	2.0
		m,p-xylene	ND	2.0
		styrene	ND	2.0
		o-xylene	ND	2.0
		bromoform (THM4)	ND	2.0
		1,1,2,2-tetrachloroethane	ND	2.0



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28189	B-120@ 25.5'	isopropyl benzene	ND	2.0
		1,2,3-trichloropropane	ND	2.0
		bromobenzene	ND	2.0
		n-propyl benzene	ND	2.0
		2-chlorotoluene	ND	2.0
		4-chlorotoluene	ND	2.0
		1,3,5-trimethylbenzene	ND	2.0
		tert-butylbenzene	ND	2.0
		1,2,4-trimethylbenzene	ND	2.0
		sec-butylbenzene	ND	2.0
		1,3-dichlorobenzene	ND	2.0
		1,4-dichlorobenzene	ND	2.0
		1,2-dichlorobenzene	ND	2.0
		p-isopropyltoluene	ND	2.0
		n-butylbenzene	ND	2.0
		1,2,4-trichlorobenzene	ND	2.0
		naphthalene	ND	2.0
		hexachlorobutadiene	ND	2.0
		1,2,3-trichlorobenzene	ND	2.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	50
methyl tert-butyl ether (MTBE)	ND	2.0
di-isopropyl ether (DIPE)	ND	2.0
ethyl tert-butyl ether (ETBE)	ND	2.0
tert-amyl methyl ether (TAME)	ND	2.0

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.9	105	70 – 130
toluene-d <sub>8</sub> (20)	19.9	99.5	70 – 130
4-bromofluorobenzene (20)	19.5	97.5	70 – 130

Date Sampled: 02/07/05	Date Analyzed: 02/08/05, 02/09/05	QC Batch #: 5284
Date Received: 02/08/05	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28190	B-120@ 31.5'	dichlorodifluoromethane	ND	2.0
		chloromethane	ND	2.0
		vinyl chloride	ND	2.0
		chloroethane	ND	2.0
		bromomethane	ND	2.0
		trichlorofluoromethane	ND	2.0
		1,1-dichloroethene (1,1-DCE)	ND	2.0
		methylene chloride	ND	2.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	2.0
		1,1-dichloroethane (1,1-DCA)	ND	2.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	2.0
		2,2-dichloropropane	ND	2.0
		chloroform (THM1)	ND	2.0
		bromochloromethane	ND	2.0
		1,1,1-trichloroethane (TCA)	ND	2.0
		1,2-dichloroethane (EDC)	ND	2.0
		1,1-dichloropropene	ND	2.0
		carbon tetrachloride	ND	2.0
		benzene	ND	2.0
		trichloroethene (TCE)	ND	2.0
		1,2-dichloropropane (DCP)	ND	2.0
		dibromomethane	ND	2.0
		bromodichloromethane (THM2)	ND	2.0
		cis-1,3-dichloropropene	ND	2.0
		toluene	ND	2.0
		1,1,2-trichloroethane	ND	2.0
		1,3-dichloropropane	ND	2.0
		dibromochloromethane (THM3)	ND	2.0
		tetrachloroethene (PCE)	ND	2.0
		1,2-dibromoethane (EDB)	ND	2.0
		chlorobenzene	ND	2.0
		1,1,1,2-tetrachloroethane	ND	2.0
		ethyl benzene	ND	2.0
		m,p-xylene	ND	2.0
		styrene	ND	2.0
		o-xylene	ND	2.0
		bromoform (THM4)	ND	2.0
		1,1,2,2-tetrachloroethane	ND	2.0



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28190	B-120@ 31.5'	isopropyl benzene	ND	2.0
		1,2,3-trichloropropane	ND	2.0
		bromobenzene	ND	2.0
		n-propyl benzene	ND	2.0
		2-chlorotoluene	ND	2.0
		4-chlorotoluene	ND	2.0
		1,3,5-trimethylbenzene	ND	2.0
		tert-butylbenzene	ND	2.0
		1,2,4-trimethylbenzene	ND	2.0
		sec-butylbenzene	ND	2.0
		1,3-dichlorobenzene	ND	2.0
		1,4-dichlorobenzene	ND	2.0
		1,2-dichlorobenzene	ND	2.0
		p-isopropyltoluene	ND	2.0
		n-butylbenzene	ND	2.0
		1,2,4-trichlorobenzene	ND	2.0
		naphthalene	ND	2.0
		hexachlorobutadiene	ND	2.0
		1,2,3-trichlorobenzene	ND	2.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	50
methyl tert-butyl ether (MTBE)	ND	2.0
di-isopropyl ether (DIPE)	ND	2.0
ethyl tert-butyl ether (ETBE)	ND	2.0
tert-amyl methyl ether (TAME)	ND	2.0

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	21.3	107	70 – 130
toluene-d <sub>8</sub> (20)	20.0	100	70 – 130
4-bromofluorobenzene (20)	20.0	100	70 – 130

Date Sampled: 02/07/05	Date Analyzed: 02/08/05, 02/09/05	QC Batch #: 5284
Date Received: 02/08/05	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28191	B-120@ 36.0'	dichlorodifluoromethane	ND	2.0
		chloromethane	ND	2.0
		vinyl chloride	ND	2.0
		chloroethane	ND	2.0
		bromomethane	ND	2.0
		trichlorofluoromethane	ND	2.0
		1,1-dichloroethene (1,1-DCE)	ND	2.0
		methylene chloride	ND	2.0
		trans-1,2-dichloroethene (trans-1,2-DCE)	ND	2.0
		1,1-dichloroethane (1,1-DCA)	ND	2.0
		cis-1,2-dichloroethene (cis-1,2-DCE)	ND	2.0
		2,2-dichloropropane	ND	2.0
		chloroform (THM1)	ND	2.0
		bromoform (THM2)	ND	2.0
		1,1,1-trichloroethane (TCA)	ND	2.0
		1,2-dichloroethane (EDC)	ND	2.0
		1,1-dichloropropene	ND	2.0
		carbon tetrachloride	ND	2.0
		benzene	ND	2.0
		trichloroethene (TCE)	ND	2.0
		1,2-dichloropropane (DCP)	ND	2.0
		dibromomethane	ND	2.0
		bromodichloromethane (THM3)	ND	2.0
		cis-1,3-dichloropropene	ND	2.0
		toluene	ND	2.0
		1,1,2-trichloroethane	ND	2.0
		1,3-dichloropropane	ND	2.0
		dibromochloromethane (THM4)	ND	2.0
		tetrachloroethene (PCE)	ND	2.0
		1,2-dibromoethane (EDB)	ND	2.0
		chlorobenzene	ND	2.0
		1,1,1,2-tetrachloroethane	ND	2.0
		ethyl benzene	ND	2.0
		m,p-xylene	ND	2.0
		styrene	ND	2.0
		o-xylene	ND	2.0
		bromoform (THM5)	ND	2.0
		1,1,2,2-tetrachloroethane	ND	2.0



Lab #	Sample ID	Compound Name	Result (ug/kg)	RDL (ug/kg)
28191	B-120@ 36.0'	isopropyl benzene	ND	2.0
		1,2,3-trichloropropane	ND	2.0
		bromobenzene	ND	2.0
		n-propyl benzene	ND	2.0
		2-chlorotoluene	ND	2.0
		4-chlorotoluene	ND	2.0
		1,3,5-trimethylbenzene	ND	2.0
		tert-butylbenzene	ND	2.0
		1,2,4-trimethylbenzene	ND	2.0
		sec-butylbenzene	ND	2.0
		1,3-dichlorobenzene	ND	2.0
		1,4-dichlorobenzene	ND	2.0
		1,2-dichlorobenzene	ND	2.0
		p-isopropyltoluene	ND	2.0
		n-butylbenzene	ND	2.0
		1,2,4-trichlorobenzene	ND	2.0
		naphthalene	ND	2.0
		hexachlorobutadiene	ND	2.0
		1,2,3-trichlorobenzene	ND	2.0

#### Oxygenated Gasoline Additives

tert-butyl alcohol (TBA)	ND	50
methyl tert-butyl ether (MTBE)	ND	2.0
di-isopropyl ether (DIPE)	ND	2.0
ethyl tert-butyl ether (ETBE)	ND	2.0
tert-amyl methyl ether (TAME)	ND	2.0

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.9	105	70 – 130
toluene-d <sub>8</sub> (20)	19.8	99.0	70 – 130
4-bromofluorobenzene (20)	19.6	98.0	70 – 130

Date Sampled: 02/07/05	Date Analyzed: 02/08/05, 02/09/05	QC Batch #: 5284
Date Received: 02/08/05	Method: EPA 8260B	



# LABORATORY

## QUALITY ASSURANCE REPORT

QC Batch #: 5296

Lab Project #: 5020802

Sample ID	Compound	Result (ug/L)
MB	TPH/Gas	ND
MB	MTBE	ND
MB	Benzene	ND
MB	Toluene	ND
MB	Ethyl Benzene	ND
MB	Xylenes	ND

Sample #	Sample ID	Compound	Result (ug/L)	Spike Level	% Recv.
28186	CMS	TPH/Gas		NS	
	CMS	Benzene	10.2	10.0	102
	CMS	Toluene	10.5	10.0	105
	CMS	Ethyl Benzene	10.6	10.0	106
	CMS	Xylenes	31.0	30.0	103

Sample #	Sample ID	Compound	Result (ug/L)	Spike Level	% Recv.	RPD
28186	CMSD	TPH/Gas		NS		
	CMSD	Benzene	10.2	10.0	102	0.64
	CMSD	Toluene	10.5	10.0	105	0.04
	CMSD	Ethyl Benzene	10.6	10.0	106	0.41
	CMSD	Xylenes	31.2	30.0	104	0.87

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery



QC Batch #: 5297

Lab Project #: 5020802

Sample ID	Compound Name	Result (ug/L)
MB	1,1-dichloroethene	ND
MB	benzene	ND
MB	trichloroethene	ND
MB	toluene	ND
MB	chlorobenzene	ND

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.9	105	70 – 130
toluene-d <sub>8</sub> (20)	20.3	102	70 – 130
4-bromofluorobenzene (20)	18.9	94.5	70 – 130

Sample #	Sample ID	Compound Name	Result (ug/L)	Spike Level	% Recv.
28186	CMS	1,1-dichloroethene	25.4	25.0	102
	CMS	benzene	46.0	25.0	84.8
	CMS	trichloroethene	19.7	25.0	78.8
	CMS	toluene	24.8	25.0	94.0
	CMS	chlorobenzene	23.4	25.0	93.6

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.0	100	70 – 130
toluene-d <sub>8</sub> (20)	20.1	101	70 – 130
4-bromofluorobenzene (20)	19.6	98.0	70 – 130



Sample #	Sample ID	Compound Name	Result (ug/L)	Spike Level	% Recv.	RPD
28186	CMSD	1,1-dichloroethene	27.7	25.0	111	8.7
	CMSD	benzene	46.4	25.0	86.4	1.9
	CMSD	trichloroethene	20.0	25.0	80.0	1.5
	CMSD	toluene	25.3	25.0	96.0	2.1
	CMSD	chlorobenzene	24.8	25.0	99.2	5.8

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.6	98.0	70 – 130
toluene-d <sub>8</sub> (20)	19.5	97.5	70 – 130
4-bromofluorobenzene (20)	19.6	98.0	70 – 130

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery

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QC Batch #: 5289

Lab Project #: 5020802

Sample ID	Compound	Result (mg/kg)
MB	TPH/Gas	ND
MB	MTBE	ND
MB	Benzene	ND
MB	Toluene	ND
MB	Ethyl Benzene	ND
MB	Xylenes	ND

Sample ID	Compound	Result (mg/kg)	Spike Level	% Recv.
LCS	TPH/Gas		NS	
LCS	Benzene	0.113	0.100	113
LCS	Toluene	0.114	0.100	114
LCS	Ethyl Benzene	0.118	0.100	118
LCS	Xylenes	0.352	0.300	117

Sample ID	Compound	Result (mg/kg)	Spike Level	% Recv.	RPD
LCSD	TPH/Gas		NS		
LCSD	Benzene	0.101	0.100	101	11
LCSD	Toluene	0.103	0.100	103	10
LCSD	Ethyl Benzene	0.105	0.100	105	12
LCSD	Xylenes	0.313	0.300	104	12

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery



QC Batch #: 5284

Lab Project #: 5020802

Sample ID	Compound Name	Result (ug/kg)
MB	1,1-dichloroethene	ND
MB	benzene	ND
MB	trichloroethene	ND
MB	toluene	ND
MB	chlorobenzene	ND

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.0	100	70 – 130
toluene-d <sub>8</sub> (20)	19.9	99.5	70 – 130
4-bromofluorobenzene (20)	19.1	95.5	70 – 130

Sample ID	Compound Name	Result (ug/kg)	Spike Level	% Recv.
LCS	1,1-dichloroethene	24.4	25.0	97.6
LCS	benzene	21.3	25.0	85.2
LCS	trichloroethene	17.9	25.0	71.6
LCS	toluene	20.7	25.0	82.8
LCS	chlorobenzene	20.5	25.0	82.0

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.4	97.0	70 – 130
toluene-d <sub>8</sub> (20)	19.9	99.5	70 – 130
4-bromofluorobenzene (20)	18.8	94.0	70 – 130



Sample ID	Compound Name	Result (ug/kg)	Spike Level	% Recv.	RPD
LCSD	1,1-dichloroethene	25.2	25.0	101	3.2
LCSD	benzene	22.3	25.0	89.2	4.6
LCSD	trichloroethene	18.8	25.0	75.2	4.9
LCSD	toluene	21.8	25.0	87.2	5.2
LCSD	chlorobenzene	21.5	25.0	86.0	4.8

Surrogates	Result (ug/kg)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.5	97.5	70 – 130
toluene-d <sub>8</sub> (20)	20.1	101	70 – 130
4-bromofluorobenzene (20)	19.0	95.0	70 – 130

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; No Recovery

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# CHAIN OF CUSTODY

Analytical Sciences  
P.O. Box 750336, Petaluma, CA 94975-0336  
110 Liberty Street, Petaluma, CA 94952  
(707) 769-3128

SCS ENGINEERS	
COMPANY NAME:	SANTA ROSA, CA 95403
ADDRESS:	3645 WESTWIND BOULEVARD
CONTACT:	STEPHEN KURTZ
PHONE#:	(707) 546-9461
FAX#:	(707) 544-5769
SCS ENGINEERS PROJECT INFORMATION	
SCS ENGINEERS PROJECT NAME:	HESSEL R9
SCS ENGINEERS PROJECT NUMBER:	0120321300
MOBILE LAB	SAME DAY
48 HOURS	72 HOURS
5 DAYS	NORMAL

LAB PROJECT NUMBER:	5020302
SCS ENGINEERS PROJECT NAME:	HESSEL R9
SCS ENGINEERS PROJECT NUMBER:	0120321300
GEOTRACKER EDF:	X Y N
GLOBAL ID:T0609720079	
COOLER TEMPERATURE	
COC	

ITEM	CLIENT SAMPLE I.D.	DATE	SAMPLED	TIME	MATRIX	#	CONT.	PRESV. YESNO	COMMENTS	LAB SAMPLE #
1	B-120 @ 25.0'	7-25-05		11:15	water			X		28186
2	B-120 @ 16.0'			12:15	soil			X		28187
3	B-120 @ 24.0'			12:40				X		28188
4	B-120 @ 25.5'			13:00				X		28189
5	B-120 @ 31.5'			13:15				X		28190
6	B-120 @ 26.0'			13:35				X		28191
7	B-120 @ 29.0'			15:40	water			X		28192
8										
9										
10										
11										

RELINQUISHED BY: <u>John Knott</u>	DATE: 8/28/05	TIME: 10:00	RECEIVED BY LABORATORY:
RECEIVED BY:	DATE:	TIME:	
RELINQUISHED BY:	DATE:	TIME:	
RECEIVED BY:	DATE:	TIME:	

TIME 10:00

DATE 8/28/05